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LETTER FROM THE EDITORS

To our readers:

This issue of The Learning Assistance Review highlights some of the research and program evaluation that is currently being conducted by practitioners in the field. These models are significant as so few programs are engaged in any kind of evaluation that demonstrates their effectiveness. Indeed, according to Boylan, only one fifth of learning assistance programs engage in "ongoing, systematic evaluation." This is unfortunate since we do such important work and are regularly being held accountable for concrete results. One of the current challenges to our practice comes from Kaplan and Sylvan, two for-profit learning companies, who are attempting to sell themselves to institutions as an affordable way to provide learning assistance. Mauro addresses this in her *Join the Conversation* piece and offers suggestions for becoming our own best advocates. We hope you will respond to her ideas by writing to the editors and "joining the conversation."

Boylan's article provides a framework for this issue as it describes the distinctions between program evaluation and program research and the importance of both. The article cites the paucity of scientific techniques and standard measures used to explore what we are accomplishing in our practice. As you read further in this issue, you will find descriptions of how some programs are employing a range of measures to evaluate their effectiveness or to improve their current status.

Bohr and Grant describe one program's use of the internet and then look at student satisfaction with it through journals, surveys and a Likert scale. In a very different study, Ley and Young raise questions regarding the use of a Likert scale when surveying developmental students. Their study examines the different study behaviors of regularly admitted students and those at risk, and they suggest that perhaps an interview produces more valid results than a Likert scale. Robertson's article focuses not on a program component that has already been delivered, but rather on an area that might make a difference if it were incorporated into tutor training. She speculated that peer tutors and students at risk may have different cognitive styles. She tested her idea by administering the Myers-Briggs Type Indicator to both populations. Her results demonstrated that there were differences in one area, and now she proposes to integrate this with inservice training.

In addition to the research articles, we have included a book review that underscores the wide scope of our field of practice. Jacqueline Peterson provides a critical analysis of *Changing Work, Changing Workers*. This book includes examples of how the workplace needs to respond to the gap between their requirements and the basic skills levels of the employees. Since many of our institutions are linking with businesses to provide instruction, this book is important as it provides a new perspective on what literacy in the workplace must become.

This issue of *The Learning Assistance Review* marks the last one with Karen Quinn as co-editor. Karen is currently assuming additional professional responsibilities and is unable to continue in the demanding role of co-editor. We are indeed sorry to lose her expertise and strong commitment to excellence. She has spent hours working with authors to ensure a quality product and has always been available to facilitate "just one more revision."

While we will truly miss Karen, we are fortunate to have a new co-editor who started working as soon as she accepted the position. We welcome Nancy Bornstein from Alverno College to the position of co-editor. Nancy is currently the director of learning assistance programs at Alverno. She brings extensive practitioner-based knowledge and experience to the journal. From this issue on, all manuscripts (for initial processing) should be submitted to Nancy Bornstein, Alverno College, 3401 South 39th Street, Milwaukee, WI 53234-3922, 414/382-6353, nancy.bornstein@alverno.edu.

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ARTICLES

THE NET AS LITERACY TOOL? EDUCATORS RESPOND

*By Lou Bohr, Northeastern Illinois University and
Jean Marie Grant, Bradley University*

Abstract

This study examines the "fit" between literacy educators and internet use. During an internet course, literacy educators evaluated the internet as an educational tool through survey and written journal responses. Literacy educators were drawn to teacher-teacher e-mailing, electronic (telecommunications) library research, to the Web, and to a far lesser extent ListServ subscriptions, and e-mailing for classroom students. The possibility of direct discussion with other practitioners was highly valued. Critical topics of discussion within teacher-teacher e-mails included low achievers, motivation, materials, strategies, and assessment. It is possible that literacy educators valued tools according to accessibility rather than tool function.

Not only is our understanding of literacy educators' use of the internet in the early stages, but our understanding of all educators' use of the internet is just being launched. Finding very little information about literacy educators using the internet, we set out to chronicle the growth and understanding of the internet use among these professionals. One purpose was to develop effective internet inservicing for Chicago area teachers of reading and writing, but we also wished to learn about the "fit" between literacy educators and the internet. If certain processes in developing internet expertise were more productive, we wished to find them. If certain features of internet use were more valuable to literacy educators in particular, we would be able to present them in later inservices. What follows are examples and conclusions drawn from an intensive semester spent introducing literacy instructors to features of internet use.

Educators' use of the net has received attention in a number of subject fields. Extant studies explore use by art teachers (Beauchamp, et. al., 1995), by social studies teachers (Mitchell-Powell, 1995), by special education teachers (Werner, 1994), by music teachers (Griswold, 1994), by librarians (Birmingham, 1994) and even by college advisors (Hart, 1993). In addition, educator internet access is

studied in a number of locations. Educators have explored internet use in rural areas of the United States (Howley & Howley, 1994; Werner, 1994), in major urban areas (Buchsbaum, 1992; Newman, 1993; Smith et al., 1995; Spriggs & Bohannon, 1995), and at international sites (Guerette, 1994; Hedberg & Harper, 1993; Kuntz, 1994; Ryan & Leith, 1995). Also, educator use of the net has received limited attention for preservice teachers (Blanchard, 1994; Ingram, 1994; Smith, et. al., 1995) and for student teachers (Casey, 1994). However, very little has been presented which will help working teachers of reading and writing to exploit the internet's potential. Since the internet is primarily "written" and "read," it does have great potential for use in literacy development. In fact, one of the internet's greatest strengths may be its capacity to promote student gains in writing and reading (Noden & Moss, 1993).

The literature related to teacher inservices, and more closely the research on teacher inservices on technology, suggests five important components for effective inservices: practical, flexible learning activities (Loucks-Horsley & Stiegelbauer, 1991); hands-on training over extended time (Hyde, 1992); immediate feedback from facilitator (Wade, 1983); the sharing of ideas with colleagues; and reflection on value for teachers' work (Fullan, 1993). We were able to build an inservice which was guided by the features noted above, and we were able to observe literacy educators as evaluators of the internet throughout the sessions.

After we describe the inservice course created using the guidelines mentioned above, we will present our methodology. Then, we will summarize participant comments about *what* internet uses are valued by literacy educators. Finally, internet features most valued by the literacy educators will be summarized.

Course Setting and Design

Offered in a Masters of Arts in Reading Degree Program, a 400 level course entitled "Computers and Reading" requires teachers' use of computer networking. The program clientele is almost entirely comprised of working teachers employed in the Chicago metropolitan area. Internet connections are slowly opening in suburban and urban Chicago area schools, and districts are making very different and somewhat uncoordinated inroads into connecting both teachers and students with networking. Many teachers are interested in this course; they feel that from the standpoint of the literacy educator, there is a great deal to be gained from a knowledge of networking.

This elective course is offered in a self-contained Macintosh Laboratory. However, each student has access to a university computer account which enables that student to establish an address, access the internet via on-campus labs, and access university accounts from modems off-campus. Students in this course must be part of the Master of Arts in Reading or in Language Arts, but may enter the course with any level of computer literacy. Course requirements include a word

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processing, database, spreadsheet, graphics, and a HyperCard or HyperStudio (both are programming softwares) project. For the computer initiate, many of these projects are easily accomplished, yet for the novice, some intensive practice is required. In addition, each student must engage in a minimum of three internet applications, choosing from ListServ subscription, teacher-to-teacher e-mailing, information and library searches, World Wide Web use, and e-mailing for classroom students.

Care was taken to place special emphasis on practical, immersion-type, hands on training. A text was provided to guide students through terminology and basic functions in the "works" software. The text, Presley and Freitas's An Introduction to Computing Using Macintosh Works 3.0 (Lawrenceville Press, Lawrenceville, N.J., 1993) also included a history of computer use and an introduction to internet communication. Care was also taken to require that all projects be made with the participants' actual classrooms in mind. Participants were asked to use spreadsheets for real grades and attendance, HyperCard projects for classroom instruction, and internet communication for gathering information for immediate use in the student's class.

Another guiding principle in the design of the course was that participants would reflect upon computer value and uses through the use of disk and e-mail journals, which would receive immediate response from the facilitator either on disk or internet. Finally, a sense of support and community was encouraged. Participants were urged to share any competency needed by others in the class, and to frequently send community messages regarding their progress.

Method

Between September and December, as nine inservice teachers worked to develop technological skills, each teacher provided both essay and survey feedback. Participants completed a pre-test and post-test Likert scaled survey, administered the first and last session, which showed gains in teacher comfort with each task. Journal entries were written on a floppy disk and submitted to the facilitator at the end of each meeting. On the disk, participating teachers responded freely to newly presented applications. In addition, all e-mail sent to the professor was logged and recorded. Disk and e-mail journals were then examined for recurring themes and issues.

The examination of the journals and e-mails made possible the emergence of an intimate view of network evaluation. In journals, participants evaluated ListServ subscription, teacher-to-teacher e-mailing, information and library searches, World Wide Web use, and e-mailing or classroom students. After the course, participants were asked to evaluate all six internet functions. Finally, a follow up survey requested short written comments and the marking of Strongly Agree to Strongly Disagree statements.

What Literacy Educators Value about the Internet

Presented in Table 1 are the results from the survey administered the first and last nights of the course. A score of five (5) indicates that the teacher was very comfortable with that function while two (2) indicates that the teacher was not comfortable and (1) indicates that the teacher had not even tried the function. The means of the pre-test showed that participating teachers were comfortable with few functions other than turning on the computer ($\mu=4.33$), and the questionnaires indicated that most teachers had not even had exposure to half the functions. By the end of the course work, participating teachers had not only gained exposure to all functions, but indeed they had developed comfort with most of the functions. On the post-test, only three items had a mean of less than 3.5, indicating that most participants were very comfortable with all functions. This represented a large change in their perceptions of competencies.

Table 1. Participant Self-Evaluation Before and After Course

	Ave Pre	SD Pre	Ave Post	SD Post	Ave Diff	SD Diff	T Value
Use of DOS	3.00	1.22	3.89	1.27	.89	1.05	2.53
Use of MAC	2.33	1.41	4.89	0.33	2.56	1.33	5.75**
Wordprocessing	3.22	1.30	4.89	0.33	1.67	1.12	4.47*
Graphics	2.11	0.93	4.22	0.97	1.67	1.12	6.83**
Spreadsheet	2.00	1.00	4.22	0.83	2.22	1.39	4.78*
HyperCard/Studio	1.11	0.33	3.89	0.78	2.78	0.83	10.00**
Database	1.22	0.67	3.89	1.17	2.67	1.12	7.16**
E-mail	1.11	0.33	4.78	0.44	3.67	0.50	22.00**
Net Library Search	1.89	1.17	4.67	0.71	2.78	1.09	7.62**
Use of Modem	1.44	0.73	3.22	1.72	1.78	1.56	3.41*
Computer Labs	1.44	0.88	3.89	0.60	2.44	0.73	10.09**
Reading Software	1.33	0.71	4.33	0.71	3.00	0.87	10.39**
Internet "Surfing"	1.00	0.00	4.44	0.54	3.44	0.53	19.61**
Making a Web Page	1.00	0.00	3.11	1.17	2.11	1.17	5.43**
Teach Wordprocessing	1.78	1.20	4.56	0.73	2.78	1.09	7.62**
Teach Hyperprograms	1.00	0.00	3.78	0.83	2.78	0.83	10.00**
Teach Writing lab	2.22	1.64	4.67	0.71	2.44	1.51	4.86*
Teach Computer History	1.44	0.73	3.44	1.24	2.00	1.32	4.54*
Spreadsheet - Grades	1.89	1.36	4.44	0.73	2.56	1.42	5.38**
File Management	3.22	1.30	4.78	0.44	1.56	1.24	3.78*
Teach Spec Needs	1.78	1.20	3.56	1.24	1.78	0.97	5.49**
Turn on Computer	4.33	1.32	5.00	0.00	0.67	1.32	1.51
Subscribe ListSrvs	1.22	0.67	4.67	0.50	3.44	1.01	10.19**
Projecting Monitor	1.44	0.88	3.89	0.78	2.44	0.88	8.32**

*p < 0.01 **p < 0.001

Dependent T-tests were conducted with significance set at $p=0.01$. From Table 1, the resulting changes were significant in all but two areas. Of most interest for the present study are the highly significant ($p<0.001$) items: e-mail (pre-test $\mu=1.11$ to post-test $m=4.78$, $t=22.00$), internet library search (pre-test $\mu=1.89$ to post-test $m=4.67$, $t=7.62$), Web surfing (pre-test $\mu=1.00$ to post-test $m=4.44$, $t=19.61$), making a Web page (pre-test $\mu=1.00$ to post-test $m=3.11$, $t=5.43$), and subscribing to ListSers (pre-test $\mu=1.22$ to post-test $m=4.67$, $t=10.19$). The pre-test to post-test survey results provide one form of data that indicate positive growth for these participating teachers. Educators had developed ease and comfort with e-mail, internet library search, internet surfing, and subscribing to ListSers. They found each of these to be useful, and had decided to learn to use these functions.

Disk journal content provided evidence by which we could chronicle teachers' growing understanding and comfort level. Erin's disk journal records her discovery and initial enthusiasm regarding internet processes: *Hi Dr. Bohr! Thank you for the great articles on the internet, World Wide Web, etc. This is exactly what I wanted to read about.... The internet is basically a bunch of computers hooked together through phone lines. The reason I can access something in Amsterdam, for example, is because my computer would go through all kinds of other computers. The other computers would "pass me along," so to speak, until I reach my destination. It is like hooking a bunch of low cost, local calls together to make one big long distance call. Right?* (Erin's journal, Oct. 3)

Finally, beyond disk journal evidence, our e-mail records showed another evaluation of the internet. We recorded e-mail "traffic patterns" as one indication of participant growth. Table 2 shows e-mail use over the weeks of the course. From the table, we can see that participants continued to use the e-mail regularly once they began. Participating teachers began experimenting at about week three although many did not get on until week four. Once they were on, the number of e-mail messages went up drastically for several weeks. While it appears that the e-mail then falls off, it is possible that the ninth week was slightly higher than usual as various assignments were due. It is also possible that weeks 10 and 11 are slightly lower because holidays interfered with work.

Table 2. E-mail Traffic

Wk 1	Wk 2	Wk 3	Wk 4	Wk 5	Wk 6	Wk 7	Wk 8	Wk 9	Wk 10	Wk 11
0	0	5	6	20	26	36	36	46	23	21

E-mail services became, in a sense, the "hub" of the course; the net became our central posting board. Participants exchanged general information, extended encouragement to their colleagues, passed on information about literacy software and Web pages and offered step-by-step instructions for forwarding, copying, and finding addresses. When one student missed the class prior to a location change, she was notified through e-mail. When a student mistakenly left belongings in the lab, another student wrote an e-mail message to assure her the belongings were safe. In their journals and e-mail messages, the functions participants noted using most were ListServ subscription, teacher-to-teacher e-mailing, information and library searches, World Wide Web use, and e-mailing for classroom students. These are considered in greater detail below.

ListServ Subscription. All but one participant subscribed to a ListServ discussion group. Most subscribed to literacy and language arts groups, though some chose to join groups for literacy students in need of tutoring. Initial difficulties were sometimes engendered by address problems: *Hi, Dr. Bohr, I am very frustrated!!!! My mail keeps getting returned. I mailed ListServ last week, it was returned. Addresses which I had previous luck with, mail was returned from those friends as well. I feel like screaming. What should I do???* (E-mail from Chris, Oct. 3). In addition, teachers who were trying e-mail for the first time were often unsure: *Dr. Bohr, It's Monday night and I thought I would come into the lab... After I send this message I will try and get into the ListServ. I hope it works.* (E-mail from Jill, Oct. 2)—*Dr. Bohr:I sent you more e-mail and I got on the ListServ. Next week I'll try to figure out what that means. Have a great weekend!* (Susan's journal, Oct. 3).

Immediately after the subscriptions were sent, participants eagerly welcomed interactions: *Dr. Bohr, You should have received a copy of my request to subscribe to LITERACY which I sent by e-mail....*(message continues on another topic)... *While I was typing this note to you, a message just popped up on my monitor advising that I have just received mail from LITERACY so I am going to terminate this message and see what it says.* (E-mail from Ben, Oct. 3).

Sarah, a participant who began the course with absolutely no computer exposure, clearly used discussion groups to the greatest advantage. She saw numerous opportunities and pursued each one. She wrote: *There are many avenues to take...* (E-mail, Oct 10), and was pleased when communications increased: *Dr. B: I forwarded to you 3 replies I received from Literacy ListServ. My request actually made it to the entire list, and I received 3 replies! (DAMN this computer [terminal]. I can't underline "3" or make it bigger or bolder).* (E-mail, Nov. 14). In a discussion in her journal about contacting a colleague for literacy assessment information, Sarah commented: *You don't know the interesting things I read while I'm in ListServ* (journal #4A, undated).

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For many of the teachers, joining an internet discussion group served more as a gateway to internet conversation than an end in itself. Unfortunately, it wasn't possible to know how much ListServ traffic ensued—as much of the interaction was only recorded by participants and never copied to the instructor. While one follow up comment showed some hesitation regarding unimportant or excess mail among subscription mailings (*I have had to go through a lot of junk mail to find "the good stuff."* Erin, Follow up survey), most participants mentioned the value of the application for literacy colleagues: *The more teachers can share resources and process, the greater benefit to teaching as a whole. I strongly believe that utilization of e-mail in conjunction with the internet will be of great benefit.* (Ben, Follow up survey).

Some used a ListServ to find a student to tutor in literacy, some used the service to learn of Web sites and software sources. The very best use, however, was undoubtedly the use of the service to find other teachers with similar interests.

Teacher-to Teacher E-mail

Teachers in this course had heard of colleagues who were able to keep in touch through e-mail, and they wanted to try this type of communication. One student wrote in her disk journal: *A couple of the teachers in my classes here at [this university] talk about how they have E-mail at their schools. That's how they communicate with each other.* (Susan's journal, Sept. 12). Seven of the nine teachers mentioned without any encouragement they had a strong desire to be able to spend precious time talking over school events, literacy activities, student dilemmas, teaching methods, or materials. Teachers fight a constant war with time; they need to confer and compare but are rarely in a situation to be able to freely discuss the crucial processes of classroom literacy development with others in similar situations.

E-mailing provided an opportunity to find a listening, interested, and somewhat impartial partner for the thinking each teacher experiences alone regarding classroom events. Maureen wrote: *I would love to correspond with another teacher and her class from another part of the world. Would I target a specific area in the world and simply ask for teachers interested in pen pals from the Chicago area?* (journal, Oct. 3). After reflecting upon the events of the entire inservice, Tracy thought: *E-mailing from teacher to teacher is also a wonderful and excellent idea. Teachers can get some ideas from other teachers of what goes on in their classrooms. I personally would love to E-mail with another teacher. I think that I would become a more effective teacher.* (Tracy, Follow up survey). In addition, early in the semester, Erin developed e-mail contact with her assistant superintendent: *Guess what I did? I have been giving my e-mail mailing address out to people in my district... I am going to write the Assistant Superintendent for Curriculum in my district, which will be a huge deal.* (Erin's journal, Oct. 10).

In many cases, a participant would pose a question on a ListServ and then quickly obtain individual addresses of other teachers struggling with similar classroom problems. The central issues for these literacy educators, within the inservice and around the entire country, overlapped and coincided. In the paragraphs to follow are samples from both Chicago participants and (sometimes anonymous) responses received from around the country. Literacy educators wanted to know what to do with **low achieving readers**: *I am teaching 9th and 10th graders who read at the 4th grade level*, wrote one participant. A teacher near the west coast replied: *I know first hand that any time students are 1-2 years behind we as teachers run into trouble. Some of these children are very unmotivated and I fear they will end up some day in a classroom much like yours. Why is this happening?* Someone from yet another area of the country offered: *I (also) have a wide range of reading and skill levels in my class. The class is composed of adults as well as concurrent high school students. Talk to you later?*

Literacy educators also wanted to know how to increase **reader motivation**. They said, *Students do not enjoy reading out of a boring textbook that is being used just because the school district bought it. What I'm leading to is that following your traditional textbook and having the students do boring work sheets is not going to appeal to your 9-10th graders*, or offered: *Start simple with your students, build their confidence up. What you have to do is get these kids excited about reading!!*

They wanted to tell each other about good **reading materials**. One person e-mailed: *My kids that I have now in class love the books of R. L. Stein. The kids can't put his books down. Stein in his books writes scary stories. It seems like more and more kids in my class are reading his books*. Among e-mail recorded, we also read: *I assume you are reading Scope Magazine...* Titles of magazines and trade books exchanged hands easily. One respondent wrote: *Books by Ronald Dahl are great for around 4th grade reading levels. I read James and the Giant Peach and thought the book was great!! I'm an adult and I enjoy these books*. Another wrote: *Our programs have had success with an adult interest low level set of materials from Children's Press. Good material and not very expensive*. Others suggested the use of various types of reading software.

Strategies for literacy instruction also changed hands. *Get them to discuss the book in literature circles*, one e-mail read. Another read: *the boys like math and word problems make them think*. Another teacher reminded one of our participants about Directed Reading Thinking Activities. Our participant wrote back: *...I just completed a graduate class last spring that explained the DRTA method. Why didn't I think to use it?*

Finally, teachers exchanged information about **assessment**: *Can someone describe and explain the GATE test? I am very much interested...* wrote one of our

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participants. The reply came a few days later: *Do you still want info? I believe the Gate test is used here in the Dept. of Human Assistance to test AFDC and Gain clients for assessment.... I also have some info about reading programs but also need info so maybe we can help each other out on that one.* Teachers in the course and on the internet were clearly eager to exchange ideas through e-mail.

Information and Library Searches. All but two students reported they had become comfortable with using either ERIC or a local library search system to find information from journals and conferences. The two functions above were used as browsing tools (*I have been doing research for my presentation [on ERIC] ...I have been researching teaching reading through computer. My intention is to give some overall information and explain some of the software I'm reading about.* (Erin's journal, Nov. 14). Participants pursued research specific to their situations—Susan studied a hypertext use for learning disabled students; Jill researched technology for preschools; Sarah looked at critical thinking for her high school students; Chris looked for a projector she could use to show the monitor of her one classroom computer to her class. As with the other processes in the course, students learned by experimentation: *Hi Dr. Bohr, Well, I just spent a great deal of time doing an ERIC search... I read through many and wanted many of the articles.* (Ben's journal, Nov. 14). Participants were generally pleased with the efficiency of this tool: *This will be very helpful to me when I take Research this summer which is my last course in the program.* (Maureen's journal, Oct. 24).

World Wide Web. As we mentioned earlier, participants looked forward to the use of the Web. Erin wrote: *Thank you for the great articles on the internet, world wide web, etc. This is exactly what I wanted to read about* (journal, Oct. 3). These teachers read about the internet and asked questions: *If you are not associated with a university, does it still cost money to access the World Wide Web from your PC at home?* (Chris's journal, Oct.3). While some questions were about access, others regarded the appropriateness of Web material in school learning. *It's a great idea, but I have already known of teachers encountering problems. Their students have run into inappropriate material. However, the quest for knowledge is very exciting for them and myself* (Erin's journal, Oct. 3). Yet questions and concerns did not dampen anticipation. Reading and raising questions, participating teachers continued their practice of Web use: *Dr. Bohr: ...found some WWW addresses that I'd like to try. I got them out of the Sun Times... I thought that it would at least give me the [Web] practice that I need* (Susan's journal, Oct. 28).

Participants began using the Web extensively outside class, and wanted to share the Web with their colleagues: *Do you want me to bring the information on how to make a web page? I will talk to my friend again and get more details if you're interested. Thanks for all your help. I can't tell you how much I've learned* (Chris's journal, Oct. 31). Chris also shared with her peers the steps that she had

used to find an ongoing Web discussion on whole language. By November 14th, Chris had sent information to all of her classmates about negotiating the Web; found the whole language discussion group page on the Web; printed articles from the Web; found the ERIC Web page; and found a program to set up her own Web page.

Participants enjoyed what they found: *Dr. Bohr: I had a wonderful time surfing the net last week ...I also used the Chicago Sun Times section to look up such motley World Wide Web pages as...* (Ben's journal, Nov. 7). By the Thanksgiving holiday weekend Ben was spending many hours on the internet: *Well, I got on the net and was able to raise a few home pages...* (E-mail from Ben, Nov. 26.). *Well, I'm back on the "net" on a Sunday afternoon. Today I am using today's Sun Times for World Wide Web home pages. ...See you in class* (E-mail from Ben, Nov. 26). Ben found the internet to be captivating as he explored various sites for fun.

Most participants concurred with Ben: *Surfing the internet is very cool. I am so glad I took this class. There is at the end of Chris' home page an area where you can respond. It automatically links you to her e-mail. Cool!* (E-mail from Ben, Oct. 10). Even those participants who spent little time on the internet during classes found themselves returning whenever time was left: *I have successfully been able to use WWW addresses to glimpse different pages that are out there. I've had a lot of fun on the internet and WWW. I keep looking for more addresses of interesting info to look up.* (Susan's journal, Nov. 27).

For one participant, Web findings became part of a presentation project: *I spent last Wednesday, the day before Thanksgiving, working on my HyperStudio project. I shipped my children to my parents. I'm not sure who had more fun* (Jill's journal, Nov. 28). In her HyperStudio presentation, Jill provided a list of 26 Web addresses which she felt the other students could use.

The enjoyment and success led to many comments regarding the value of the internet. Participants appreciated both the information and the ease of use, and, of course, the Web was perceived as a source of enjoyment. Ben reported, in his follow up survey: *This is perhaps the most exciting of the applications and the one with the greatest potential to positively impact student literacy in both reading and writing.*

E-mailing for Classroom Students. Very little work during this inservice represented attempts to bring literacy learners on line or to lay the groundwork for such an event. The obstacle, we feel, was the poor access teachers encountered in their "telecommunications disadvantaged" schools. One participant did seek to tutor a literacy learner. Ben wrote the following message to answer a ListServ request: *I saw your recent message for one (or more) pen pals... You mentioned that you*

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wanted to be "corrected" in English. If you are truly interested in receiving some syntactic and semantic tips, please let me know and we can discuss how we might to that. I look forward to receiving a reply (e-mail written by Ben and copied to Dr. Bohr, Oct. 24). Chris lightly touched upon future applications for students: *I have one student who pretty much has told the whole world that the only interest he has is in computers. Perhaps a computer would increase his motivation to read...* (journal, Nov. 28). Chris later did make arrangements to begin computer access from her classroom.

Erin also had plans (but did not yet have enough access) to begin a student connection: *One thing we are going to do in my district is have the kids write stories on the computer, send them via the modem to another school so other kids can read and respond to the stories. This would promote an understanding of the author-reader relationship. It would also be fun for the kids to hear feedback from other kids. We would definitely have to take care to make sure that kids are responding in a way that is productive yet caring.* (Erin's journal, Sept. 12) Toward this end, Erin began to build a library: [I found] *the first book that is written about the internet for kids. The forward is by a fourth grader. It really explains things very well* (journal, Nov. 14).

Findings and Implications. In summary, literacy educators clearly valued professional use of the internet. Our survey and written data easily point to e-mail, especially teacher-to-teacher e-mail, as an application which was quickly adopted, repeatedly used and highly valued by literacy educators. Frequent topics for e-mail dialogue included low achievers, motivation, materials, strategies, and assessment. Literacy educators were also drawn to electronic library research, to the Web, and to ListSrv subscriptions. E-mailing for classroom students was explored to a far lesser extent. All five applications were investigated by educators; however, only four were truly utilized, and among these the teacher-to-teacher communication was overwhelmingly in greatest demand. Earlier findings also support the notion that, to date, teacher communication is the most important function for e-mail in relation to classrooms (Russett, 1995, Souviney, Saferstein, & Chambers, 1995, Willis, 1993).

Why were teachers less drawn to classroom uses? It is possible that literacy educators valued tools according to accessibility rather than tool function. Teacher use was largely determined by the types of access available; teachers would not value what they could not use. Urban schools and elementary schools are generally not the first to acquire access for students and teachers. These teachers did fall squarely into categories commonly thought to contain "telecommunications disadvantaged" educators (Connell & Franklin, 1994; Jones, 1994; Maddux, 1994), but they may well be representative of a great number of teachers across the country. A recent study of internet access for American K-12 schools claims only 12% have the necessary inservicing, hardware, and phone line

for access (Maddux, 1994). We believe that as access in schools increases, we will be able to show that it is the level of access to these internet tools which actually determines what teachers value. Teachers will continue to have a low estimation of applications which are unfamiliar or unavailable. However, inservice initiatives which include both learning and practice may soon engender full classroom use of the internet.

Nonetheless, both access and appreciation may grow for literacy educators in concert with adequate internet inservicing. When presented with a small but practical "window" into internet possibilities, teachers in this study rapidly seized the opportunity to make use of the tool to learn more about literacy education. As schools provide more communication hardware, teachers will come to better study and learn to value the internet. Yet the reverse is also true: as teachers try out and study internet through inservicing and hands-on practice, the supply of functional communications equipment in schools will also increase. We may accelerate the growth in valuable internet use by introducing teachers to internet use in a number of ways: through informal presentations, workshops, inservice meetings, conferences, and through formal courses such as the one described above. Teachers are rapidly learning that they can talk to others with experience and can find quick Web answers. They may, as a result, soon conceptualize and facilitate those functions for their students. Efficient inservicing can expedite this process.

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References

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| <p>Apple, M. W. (1991). The new technology: Is it part of the solution or part of the problem in education? <u>Computers in the Schools</u>, 8(1/2/3), 59-81.</p> <p>Beauchamp, D. G., et. al., (1995). International Visual Literacy Association. Imagery and Visual Literacy: Selected Readings from the Annual Conference of the International Visual Literacy</p> | <p>Association. 26th, Tempe, Arizona, October 12-16, 1994).</p> <p>Birmingham, F. R. (1994). The Mankato State Graduate Level Internet Course. <u>TechTrends</u> 39(3) 9-10.</p> <p>Blanchard, J. (1994). Teacher Education and the Integration of Technology. A Reading and Language Arts Perspective. <u>Journal of Information</u></p> |
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- Technology for Teacher Education, 3(2), 187-198.
- Buchsbaum, H. (1992). Portrait of a Staff Development Program. Electronic Learning, 11(7), 18-23, 26-27.
- Budin, H. R. (1991). Technology and the teacher's role. Computers in the Schools, 8(1/2/3), 15-26.
- Casey, S. M. (1994). TeacherNet: Student Teachers Travel the Information Highway. Journal of Computing in Teacher Education, 11(1), 8-11.
- Connell, T., & Franklin, C. (1994). The Internet: Educational issues. Library Trends, 42(4), 608-625.
- Dupagne, M., & Krendl, K. A. (1992). Teachers' attitudes toward computers: A review of the literature. Journal of Research on Computing in Education, 24(3), 420-429.
- Ely, D. P. (1990). Conditions that facilitate the implementation of educational technology innovations. Journal of Research on Computing in Education, 23(2), 298-305.
- Ely, D. P. (1993). Computers in schools and universities in the United States of America. Educational Technology, 33(9), 53-57.
- Fullan, M. (1993). Innovation, reform, and restructuring strategies. In G. Cawelti, Challenges and achievements of American education, 116-133. Alexandria VA: Association for Supervision and Curriculum Development.
- Gressard, C. P., & Loyd, B. H. (1986). Validation studies of a new computer attitude scale. Association for Educational Data Systems Journal, 18(4), 295-301.
- Griswold, H. E. (1994). Multiculturalism, Music, and Information Highways. Music Educators Journal, 81(3), 41-46.
- Guerette, Y. (1994). The Wired Province—New Brunswick Leads in Network Technology. School Business Affairs, 61(2), 16-17.
- Hart, J. (1993). Computer Communications for Advisors. NACADA Journal, 13(2), 27-33.
- Hedberg, J. G., & Harper, B. (1993). Supporting and Developing Teachers through Telecommunications. Educational Media International, 30(2), 88-93.
- Howley, A. A., & Howley, C. B. (1994). Receptivity to Telecommunications among K-12 Teachers in a Rural State: Results of a West Virginia Survey. Paper presented at the Annual Meeting of the National Rural Education Association. Tuscaloosa, AL., Oct., 1994. ED374958.
- Hurst, D. S. (1994). Teaching technology to teachers. Educational Leadership, 51(7), 74-76.
- Hyde, A. A. (1992). Developing a willingness to change. In W. T. Pink and A. A. Hyde (Eds.), Effective Staff Development for School Change, 171-190. Norwood, N.J., Ablex Publishing Corporation.
- Ingram, J. K. (1994). A model Curriculum to Promote Teacher-Centered Use of Technology. Peabody Journal of Education, 69(4), 113-130.
- Jones, D. (1994). Who are the telecommunications disadvantaged? Computers in the Schools, Editorial, 11,1.

- Joyce, B., & Showers, B. (1988). The design of training: Providing the conditions for learning. Student achievement through staff development. New York: Longman.
- Kay, R. H. (1992). The computer literacy potpourri: A review of the literature, or McLuhan revisited. Journal of Research on Computing in Education, 24(4), 446-456.
- Koohang, A. A. (1989). A study of attitudes toward computers: Anxiety, confidence, liking, and perception of usefulness. Journal of Research on Computing in Education, 22(2), 137-150.
- Kuntz, P. S. (1994). Swahili-L: Using Computer Technology To Promote African Language Literacy. Paper presented at the Annual Meeting of the African Studies Association. Toronto, Ontario, Canada, Nov. 3, 1994. ED376714.
- Lieberman, A. (1986). Collaborative research: Working with, not working on... Educational Leadership, 43(5), 28-32.
- Little, J. W. (1982). Norms of collegiality and experimentation: Workplace conditions of school success. American Educational Research Journal, 19(3), 325-340.
- Lomerson, W. L., & Knezek, G. A. (1991). Teacher benefit: The critical design criterion for computer managed instruction. Educational Technology, 31(8), 17-23.
- Loucks-Horsley, S., & Stiegelbauer, S. (1991). Using knowledge of change to guide staff development. In A. Lieberman and L. Miller (Eds.), Staff development for education in the '90s, 15-36. New York: Teachers College Press.
- Maddux, C. (1994). The Internet: Educational Prospects—and Problems. Educational Technology, 34, 37-43.
- Massoud, S. L. (1991). Computer attitudes and computer knowledge of adult students. Journal of Educational Computing Research, 7(3), 269-291.
- McPherson, R. B., & Shapiro, K. S., (1993). Into the mountains: Lessons from veteran teachers. Curriculum Review, 32(7), 3-10.
- Mitchell-Powell, B. (1995). More than Just a Pretty Interface: Access, Content and Relevance in Computer Technology. Social Studies and the Young Learner, 7(3), 11-13.
- Muir, M. (1994). Putting computer projects at the heart of the curriculum. Educational Leadership, 51(7), 30-32.
- Newman, D., & Others. Center for Technology in Education, New York, NY. The Ralph Bunche Computer Mini-School: A Design for Individual and Community Work. Technical Report No. 29. ED359932.
- Noden, H., Moss, B. (1993). Virtual Schools: Reading and Writing (Professional Development). Reading Teacher, 47(2), 166-168.
- Persky, S. E. (1990). What contributes to teacher development in technology. Educational Technology, 30(4), 34-38.
- Presley, B., & Freitas, W. (1993). An Introduction to Computing Using

- Macintosh Works 3.0. Lawrenceville, NJ: Lawrenceville Press.
- Russett, J. (1995) Using Telecommunications with preservice teachers. Journal of Mathematics and Science Teaching, 14(1/2), 65-75.
- Ryan, S., & Leith, D. (1995). Training with the Web: Internet Training in an Academic Library Environment. Australian Library Journal, 44(1), 22-26.
- Smith, R. A., et. al. (1995). Policy and Leadership: Preparing Preservice Teachers to Use Technology in the Classroom. Computing Teacher, 22(4), 57-59.
- Sparks, D., & Loucks-Horsley, S. (1990). Models of staff development. In W. R. Houston (Ed.). Handbook of research on teacher education, 234-250. New York: Macmillan.
- Sparks, G. M. (1983). Synthesis on staff development for effective teaching. Educational Leadership, 41(3), 65-72.
- Spriggs, V. G., & Bohannon, H. C. (1995). Florida School District Teams Technology with Training. T.H.E. Journal, 22(10), 70-74.
- Souviney, R. S. B., & Chambers, E. (1995). InterNet: Network communication and teacher development. Journal of Computing in Teacher Education, 11(4), 5-15.
- Stasz, C., & Shavelson, R. J. (1985). Staff development for instructional uses of microcomputers. Association for Educational Data Systems Journal, 19(1), 1-19.
- Sutton, R. E. (1990). Equity and Computers in the schools: A decade of research. Review of Educational Research, 61(4), 475-503.
- Wade, R. K. (1985). What makes a difference in inservice teacher education? A meta-analysis of research. Educational Leadership, 42(4), 28-33.
- Werner, J. (1994). Reaching Out to the World: Training Teachers To Integrate Telecommunications into Special Education Classrooms. West Virginia. In: D. Montgomery (Ed.), Rural Partnerships: Working Together. Proceedings of the Annual National Conference of the American Council on Rural Special Education (ACRES). 14th, Austin, Texas, March 23-26, 1994. see RC 019 557. ED369595.
- Willis, J. (1993). Educational technology: Issues and innovations. Computers in the Schools, 9(4), 13-32.
- Woodrow, J. E. J. (1991). Teachers' perceptions of computer needs. Journal of Research on Computing in Education, 23(4), 75-493.

THE CASE FOR PROGRAM RESEARCH IN DEVELOPMENTAL EDUCATION

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Abstract

This article discusses how the sources of research-based information in developmental education have increased in recent years except in the area of program evaluation. This area offers significant potential for information as it has the most room to grow. The author describes the differences between program evaluation and research and argues for the need to standardize the criteria used. The article concludes with a list of practical ideas for conducting program research and also for disseminating the data once it is analyzed.

Introduction

Almost 30 years ago, John Roueche asserted that "There is a paucity of research on the efficacy of remedial programs" and pointed out that few colleges had bothered to evaluate whether or not their programs contributed to student success (1968, p. 47). Consequently, there was little evidence to suggest that developmental education actually worked. Nearly a decade later, Cross (1976) indicated that the amount and quality of research on developmental education had improved somewhat but "As is common in the ambiguous world of research, both the optimists and the pessimists... have research evidence to support their point of view" (p. 39). In 1992 the author, in addressing the National Conference on Research in Developmental Education, argued that after more than two decades of research in developmental education we now have clear evidence that well-designed and properly-implemented developmental programs can improve student retention, grades, and graduation rates (Boylan, 1992).

Unfortunately, all programs do not work equally well, and only one in five actually engages in ongoing, systematic evaluation to determine how well it does and what it does well (Boylan, Bonham, & Bliss, 1994). We know, through research, that the concepts and general processes of developmental education can contribute to student success. We have far less knowledge about the specific activities that contribute to that success and who is most likely to benefit from those activities. Our research needs in the field, therefore, may have shifted from establishing that what we do works in general to establishing that particular programs and particular techniques work with particular students.

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Sources of Research Information

It is the author's opinion that four sources provide the majority of our research-based information in the field of developmental education. These include:

- 1) professional journals, books, and other publications in the field;
- 2) similar literature from other fields related to developmental education such as psychology, teaching and learning, student development, sociology, reading, and linguistics;
- 3) graduate programs in the field; and
- 4) published and unpublished results from evaluations of developmental programs.

Fortunately, the number of most of these sources of research in the field has increased substantially in the past two decades.

In 1977 there was only one journal dealing exclusively with developmental education or learning assistance issues. As of 1997 there are seven, The Learning Assistance Review being a recent and welcome addition to this number.

The number of graduate programs in developmental education has also increased. In 1977 the graduate program in developmental education at Appalachian State University was the only one in the field. Now there are four, the other programs being offered by Grambling State University, National-Louis University, and Southwest Texas State University. Each of these programs makes a contribution to our knowledge through the study and research of their faculty and students.

The source of research information that has expanded least is that resulting from the evaluation of individual developmental programs. Twenty years ago, Roueche & Snow (1997) reported that although program evaluation was associated with program success, only about one program in five actually engaged in the systematic evaluation of program outcomes. In 1994, The National Study of Developmental Education found that only 24% of the nation's developmental programs conducted comprehensive, ongoing, and systematic evaluation (Boylan, Bonham, & Bliss). Although the percentage of programs engaging in such evaluation may have increased since this finding was first reported, it is reasonable to assume that the amount of program evaluation that takes place in developmental education is still relatively small.

Consequently, program evaluation is the source of research in developmental education that offers the most potential for expanding our knowledge base. There is simply more room to grow in this area than in any other.

Program Research versus Program Evaluation

There are many similarities between program research and program evaluation (see Table 1). Schulman (1988), for instance, defines research as any academic activity involving disciplined inquiry in which observations are collected, evidence is marshalled, and arguments are developed in a systematic manner. Both program research and evaluation involve the systematic collection of various sorts of data on students and their performance in program courses and services. Both involve the analysis of information on specific student outcomes criteria. Both require marshalling of evidence and the careful reporting of results. Program evaluation, therefore, may definitely be considered as a form of research.

Table 1. Differences between Program Research and Program Evaluation

	Program Research	Program Evaluation
Collects Data in a Systematic Manner	*	*
Marshals Evidence for Reporting	*	*
Is Replicable	*	
Follows Formal Rules of Evidence	*	
Uses Primary Data		*
Uses Secondary Data	*	*
Uses Tertiary Data	*	
Is Designed for Larger Audiences	*	

Program research, however, meets all the above criteria plus two more. First, program research requires that it be done in such a way and reported in such a manner that it may be replicated by others (Boylan, 1996). Second, program research is generally done for the purpose of reporting the results to a larger audience than program staff or local administrators. Program research may originally be done for any number of reasons such as conducting formative or summative evaluation of a program. The results, however, are also used for the purpose of informing the field of the research outcomes, thus adding to the body of knowledge in the field.

Foster (1997) also adds another distinction between program research and evaluation, that of formality. Program research is generally conducted using much more formal rules and procedures than program evaluation. For instance, in program research student samples generally include the entire population of program participants or a random sample thereof. Students for whom available data is incomplete are generally discarded from the sample in program research. Program research is usually conducted using individual students as the unit of

analysis rather than the whole group performance of students. It is this formality that contributes to a research study's replication by other scholars.

Criteria for Program Research and Evaluation

In order to advance the research-based professional knowledge of our field, not only do more programs need to engage in evaluation but those which already do need to standardize the measures used to assess their outcomes. At present, there is wide divergence in the criteria used by individual developmental programs to report evaluation finding.

Some programs measure their effectiveness by reporting the number of student contacts or the total minutes or hours of service provided. Some do so by surveying students to determine their satisfaction with program services. Others measure effectiveness by calculating retention and graduation rates for student participants. Still others measure the extent to which students who have participated in developmental courses succeed in later curriculum courses in related disciplines.

Each of these measures has some validity as a criterion for program evaluation. Nevertheless, this diversity and lack of consensus on program evaluation criteria causes at least three problems. The first is that as long as individual programs use different criteria for evaluation it is impossible to establish a general set of standards for program evaluation in developmental education. A second problem is that the lack of a generally accepted set of standard evaluation criteria makes it impossible for individual programs to measure their performance against a standard. The third problem is that the lack of consistent evaluation and reporting standards makes it difficult to combine information from individual program evaluations to generate data for research purposes.

Fortunately, the National Study of Developmental Education (Boylan, Bonham, Bliss, & Claxton, 1992) provides some guidelines that may be used to establish a standard for the evaluation of developmental programs. This study assessed the efficacy of developmental programs using the following research/evaluation criteria:

- ▶ student participation rates in tutoring,
- ▶ student grades in courses tutored,
- ▶ student grades in developmental courses,
- ▶ student completion rates in developmental courses,
- ▶ student grades in follow-up courses taken after participation in developmental education,
- ▶ student cumulative grade point averages (GPA),
- ▶ overall student retention rates, and
- ▶ number of terms students were retained.

Information for analysis of these criteria was generated through student transcripts. Demographic information was also collected on individual students and matched to those students' transcripts. The student demographic information used included the following: age, socioeconomic status, degree aspirations, race, gender, and enrollment status (full-time/part-time). This collection of demographic information matched to student transcripts enabled data to be analyzed not only in the aggregate, but also for students with various demographic characteristics.

These student demographic and program outcome criteria were first outlined in 1992. Since then, they have become the standard against which developmental programs are measured. Statewide evaluations of developmental education in Minnesota (Minnesota State Colleges and Universities, 1994), North Carolina (North Carolina Department of Community Colleges, 1994), and Texas (Boylan, et. al., 1996) have used these criteria to assess the results of developmental education programs. A variety of individual program evaluations have also used these criteria. Such consistency in reporting criteria has added substantially to our capacity to compare, contrast, and evaluate developmental education across the nation.

Collecting Data for Program Research

The capacity of modern computers to store, retrieve, and analyze information in data bases makes it possible to do program research on a level that would have been beyond comprehension only 20 years ago. Unless a program served an extremely small number of students, it would have been impossible to do sophisticated program research without using computerized data bases. Today, however, almost any modern desktop computer has more than enough capacity to store, retrieve, array, and analyze complete data bases from even the largest developmental programs. Given that capacity, it is simply necessary to collect the desired information and have it entered into a computerized data base in order to begin program evaluation and research activities.

The first step in conducting program evaluation or research is to decide which variables should be measured. There are three levels of evaluation information most relevant to developmental education (see TABLE 2). These are **primary**, **secondary**, and **tertiary** (Boylan, 1997).

Table 2. Levels of

Level
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Secondary
Tertiary

Primary information includes the number of students served, English 090 as a term outcome, Mathematics better; or the examples of a number of students passed college more; or the

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Table 2. Levels of Program Evaluation Data

Level	Question	Data
Primary	How many, how much?	Number of sections, number of students.
Secondary	What are short-term outcomes?	Number of students completing/passing.
Tertiary	What are long-term outcomes?	Number of students passing follow-up course following remediation.

Primary information describes how much of something was done. The total number of developmental mathematics sections offered, the total number of students served by a program, or the total number of female students enrolled in English 090 are examples of primary data. Secondary information describes short term outcomes. The number of students who persisted through completion in Mathematics 090; the number of students who passed English 090 with a C or better; or the number of students who were still enrolled after their first term are examples of secondary data. Tertiary data describes longer term outcomes. The number of students who passed Mathematics 090 with a C or better and who later passed college algebra; the number of students who persisted for two years or more; or the number of students who graduated are examples of tertiary data.

Depending upon what sorts of questions are being asked, programs would provide information at various levels. If the state higher education coordinating board only wants to know how many students took remedial/developmental courses, then primary information would suffice to answer the question. If the dean of instruction only wants to know how many students pass their developmental courses, then secondary information would suffice. If the state legislature wants to know if those who take remedial/developmental graduate, then tertiary information would be necessary.

Ideally, a comprehensive program evaluation report would include all three types of data. This would enable program staff to respond to practically any question asked about the outcomes of developmental education.

The types of questions asked and the levels of data used in responding also differentiate between program evaluation and program research. Program evaluation almost always includes primary data to answer questions having to do with the amount of remediation provided. Program research is usually less concerned with the number of courses or the amount of services offered and more concerned about the outcomes of courses and services. Consequently, program research is more likely to focus on secondary and tertiary questions and data.

Once the program staff has determined what questions it wants to address through program evaluation or research, it is then necessary to identify the data that will address those questions. The staff must also decide how the data is to be collected.

Most developmental programs have students or staff complete forms recording basic demographic data on student participants. Typically, this information is then used to report what percentage of students served by the program fall into various demographic categories such as male or female, full-time or part-time. Although this information is usually reported in the aggregate (for instance, "54% of program participants were female"), it is important to collect and record the information for each student on an individual basis. This should be done by using the student's institutional identification or social security number. In order to simplify the later collection of performance data for each student, students should be identified by whatever code number is used by the local registrar. This will enable student demographic information to be matched to academic performance information available through registration records.

Most developmental programs have class rosters and grade reports from whatever remedial/developmental courses their students take. Most programs also keep records of students who have participated in tutoring or advising. These records can be used to answer questions such as "How many students passed their developmental courses" or "How many students who received tutoring passed the course in which they were tutored?" By matching students' identification numbers to course grades, other questions can be answered such as "How many women completed English 090," "How many African-American students received a C or better in Math 090," or "How many part-time students who participated in tutoring passed the course in which they were receiving tutoring."

Other information necessary for program research may not be available from program records. Information on the number of terms a student persisted before completing a course of study, graduating, or departing is available from registration records. Similarly, grades obtained in regular curriculum English courses by those who took and passed remedial/developmental English are also available from registration records. This information can be obtained with relative ease if the program has student identification numbers recorded for each of its participants. Using these student identification numbers, student performance data available from registration records can be combined with student demographic information to answer questions such as "How many minority students participating in our program are retained through graduation" or "of those students who pass English 090 with a C or better, how many later take and pass English 101?"

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Analyzing and Reporting Data for Program Research

Once appropriate student demographic and program outcome data is collected and entered into a data base, it is then possible to "mix and match" student characteristics with program outcomes. This enables us to measure such things as participation, academic success, and retention rates according to a variety of student demographic variables. This mixing and matching allows us to explore the impact of various program courses and services on specific groups of students or to look at program outcomes as an aggregate for all students.

Program research typically involves fairly straightforward reporting of the types of students served and the outcomes related to the services. The use of experimental or quasi-experimental research designs is not necessary or even possible in most cases. These designs require the establishment of control groups and the comparison of the performance of these groups to that of program participants (Campbell & Stanley, 1963). This is usually not possible because it would be unethical to deliberately deny treatment to students who need it simply for the purpose of establishing a control group.

Rather than using experimental research techniques, program research involves simple descriptive techniques. The intent of program research is not to prove that technique A works better than technique B. Instead, its intent is simply to describe the population served and report the results of various treatments. In most cases, the use of percentages, averages, pie charts, or frequency distributions is sufficient to analyze and present the information resulting from program research.

Tips for Conducting Program Research

Start with Simple Steps

Although an eventual goal of program evaluation and program research is to implement a comprehensive analysis of all aspects of a given program, it is usually wise to start with a single aspect and to build upon this. A program might, for instance, begin by analyzing the percentage of various demographic groups that pass various developmental courses. Later, the program could track the performance of these students and determine how long they were retained or what grades they received in follow-up courses in the regular curriculum. Or, a program might begin by analyzing the percentage of students who received tutoring and later passed the course for which they were being tutored. Later, they might break down this data according to gender, race, or full-time/part-time status.

Unless a program already has a well-established, comprehensive, and systematic evaluation mechanism in place, it is important to begin with small steps in

program research. Otherwise, those involved in the process may be overwhelmed by the amount of data to be collected and analyzed.

Use Random Samples

For smaller programs serving fewer than 100-200 students, the records and performance variables for all students can form the basis for program research. Programs serving larger numbers of students (500 or more) can simplify the process of data collection and analysis by using a random sample of the entire population. The randomization process enables us to study a smaller population that accurately represents the total population (MacMillan, 1996). In general, a random sample for program research should include either 150 students or 10% of the entire population, whichever is larger. Guidelines for selecting a random sample may be found in practically any statistics textbook.

Establish Goals and Objectives "Up Front"

Before any evaluation or research activity is undertaken, it is important to determine why it is being done. Everyone involved in the process should know why it is being done, what questions will be asked, how the program will benefit, and how the results will be used. Establishing the general goals and specific objectives for evaluation or research is a critical first step in the process.

Involve Others in the Process

It is unlikely that all the data needed for comprehensive program evaluation or research will be found in one place. Other agencies such as the Registrar's Office, the Financial Aid Office, or the Institutional Research Office will probably have some of the data elements necessary for program research. It is important to involve representatives from these offices at the outset. They can help identify the necessary data and provide assistance in retrieving it.

It is also important to involve campus decision-makers in the process. It is far more likely that they will respond favorably to data from program evaluation or program research activities if they are involved at the outset in developing these activities.

Involve Staff in the Process

It is ironic that those most responsible for the success of a development program are often those least involved in the evaluation of their efforts. Frequently, program faculty and staff are involved neither in the design nor the implementation of evaluation and research projects. Often, they are not even told of the results of these projects.

Getting faculty to gather data, and research the results.

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Getting faculty and staff involved in deciding what questions to explore, how to gather data, and how to report it will contribute to their support of evaluation and research activities. It will also increase the likelihood that they will "buy into" the results.

Reporting Program Evaluation and Research

As noted earlier, one of the differences between program evaluation and program research is that program research is intended for a larger audience than the local campus. In developing a program research project, therefore, it is important to determine how the resulting information will be shared with other colleagues in the field.

One of the simplest ways of sharing it is to present the results at local or state conferences. Conference program coordinators are always looking for good presentations and any presentation that is data based and addresses questions of interest to the field has a very good likelihood of being accepted.

After practicing the presentation by delivering it at a local conference, the presentation might be delivered at a national conference. Those who have done program research on similar topics at different campuses might also want to collaborate in developing a presentation for a national conference. The fact that the research has been replicated at more than one site strengthens its validity and its value to the field.

The newsletters of state professional associations provide another vehicle for sharing the results of program research. Newsletter editors are always searching for material, and the report of a local program research effort not only disseminates useful information but might also encourage others to engage in program research.

Publishing the finding from program research in professional journals is also an excellent way of disseminating results. The role of these journals is to communicate information that will increase our understanding and improve the practice of developmental education. Most editors are quite willing to work with prospective authors to help develop and organize a manuscript in order to improve the likelihood that it will be accepted for publication. A list of journals in the field is included in APPENDIX A.

Conclusion

Through many of the early years in developmental education, conference presentations and the literature of the field lacked sophistication and data. They often consisted of narratives about what particular programs did and how they did them. They answered the question of "what did you do" but did not answer

the question "how well did it work." Program research allows us to begin answering the latter question. It also allows us to determine, not only what works, but what works best for specific groups of developmental students.

Program research as defined here should not be confused with classical experimental research. It will not prove, for instance, that developmental education interventions caused student success. It can only establish that these interventions might have been related to student success.

Program research is not the sort of research that is likely to be featured in the nation's major educational research journals. It is, however, the sort of research that can help us understand basic processes and techniques in developmental education and how well these processes and techniques work for various types of students. It is also the sort of research that, when combined with data from several different programs, can form the basis for later and more sophisticated research.

Program research has its roots in program evaluation. As a result, it will certainly help local program faculty and staff understand better the outcomes of their efforts. It will also provide them with information useful in improving those efforts. Furthermore, it will help validate these efforts in an environment that increasingly calls for accountability.

Perhaps the greatest potential benefit of program research, however, is that it encourages us to use standard measures and scientific techniques to explore what we do. These measures and our performance according to them can establish baseline data on the impact of various developmental education interventions. This information may then be used to assess the efficacy of developmental education nationally and validate that what we do is, indeed, working to help under prepared students succeed in American higher education.

Journal of College Reading and Learning
College of Reading and Learning Skills
Dr. Jim Bell, Editor
University of Northern Iowa
3333 University Drive
Prince George, IA 52592
(604/960-6365)

Journal of Developmental Education
National Center for Developmental Education
Barbara Calderwood, Editor
Appalachian State University
Boone, NC 28608
704/262-6101

Learning Assistance Review
Midwest College

Martha Casazza, Editor
National-Louis University
18 S. Michigan Avenue
Chicago, IL 60607
312/621-9650, ext. 211

Karen Quinn, Co-Editor
University of Illinois at Chicago
1200 West Harrison Street
Suite 2900, M/C 300
Chicago, IL 60607
312/413-2179

Opportunity Outcomes
Journal of the National Association of Developmental Education
Christopher Davis, Editor
NCEO
P.O. Box 90193
Washington, D.C. 20090

Appendix A
Noteworthy Journals
Developmental Education

Journal of College Reading and Learning
College of Reading and Learning Association
Dr. Jim Bell, Editor
Learning Skills Centre
University of Northern British Columbia
3333 University Way
Prince George, BC V2N4z9 Canada
(604/960-6365)

Journal of Developmental Education
National Center for Developmental Education
Barbara Calderwood, Managing Editor
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704/262-6101

Learning Assistance Review
Midwest College Learning Center Association

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312/621-9650, ext. 3273

Karen Quinn, Co-Editor
University of Illinois at Chicago
1200 West Harrison
Suite 2900, M/C 327
Chicago, IL 60607-7164
312/413-2179

Opportunity Outlook
Journal of the National Council of Educational Opportunity Association
Christopher Davis, Editor
NCEO
P.O. Box 90193
Washington, D.C. 20090-0193

Research and Teaching in Developmental Education
Journal of the New York State College Learning Skills Association
Patricia Malinowski, Editor
Finger lakes Community College
4355 Lake Shore Drive
Canandaigua, NY 14424

RIDE (Research in Developmental Education)
National Center for Developmental Education
Barbara Calderwood, Managing Editor
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Hunter R. Boylan, Ph.D., is the director of the National Center for Developmental Education at Appalachian State University.

References

- Boylan, H. R. (1992). What we know about what we do and what we do about what we know: The state-of-the-art in the developmental education. Address before the First National Conference on Research in Developmental Education, November, Charlotte, NC.
- Boylan, H. R., Bonham, B. S., Bliss, L. B., & Claxton, C. S. (1992). The state-of-the-art in developmental education: Report of a national study. Presented at the First National Conference on Research in Developmental Education, November, Charlotte, NC.
- Boylan, H. R., Bonham, B. S., Bliss, L. B. (1994). Characteristic components of developmental programs. *Research in Developmental Education*, 11(1), 1-4.
- Boylan, H. R. (1996). Reading the literature in the field: Some advice for the developmental educator. *Research in Developmental Education*, 12(5), 1-4.
- Boylan, H. R., and others (1996). An evaluation of the Texas Academic Skills Program. Report prepared for the Texas Higher Education Coordinating Board, Austin, TX.
- Boylan, H. R. (1997). Criteria for program evaluation in developmental education. *Research in Developmental Education*, 14(1).
- Boylan, H. R., Drewes, S. (1997). Using research to develop our knowledge base for the future. Presented at the National Association for Developmental Education Conference, March, Denver, C.O.
- Campbell, D. E., Stanley, J. (1963). *Experimental and quasi-experimental designs for research*. Chicago: Rand-McNally.
- Cross, K. P. (1976). *Accent on learning*. San Francisco: Jossey-Bass.
- Foster, D. (1997). REA: Research, evaluation, & assessment. Presented at the Pennsylvania Association for Developmental Education, April. Hidden Valley, PA.
- MacMillan, J. (1996). *Educational research: Fundamentals for the consumer*. New York: Harper-Collins.
- Roueche, J. E. (1968). *Salvage, redirection, or custody*. Washington, DC: American Association of Junior Colleges.

Roueche, J. E., & Snow, G. (1977).
Overcoming learning problems.
San Francisco: Jossey-Bass.
Schulman, L. (1988). Disciplines of
inquiry in education. An

overview in R. Jaeger (Ed.),
Complementary methods for
research in education. (pp. 3-17).
Washington, DC: American
Educational Research Association.

By Jacques

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MBTI AND COLLEGE STUDENTS

By Jacqueline Robertson, Ball State University

Abstract

The purpose of this study was to determine if differences exist in learning styles between developmental "at risk" college students and college peer-tutors. The implication was that if differences exist, they should be addressed during inservice training for the peer-tutors so that student learning can be optimized. Through the Myers-Briggs Type Indicator (MBTI), differences were found on the Judging-Perceiving scale. Academic skills related to this scale are discussed along with suggestions peer-tutors can use during their tutoring sessions.

Differences Between Developmental Students and College Peer-Tutors as Determined by the MBTI

From a theoretical perspective, individuality and autonomy are highly regarded within American society and in higher education; this view supports acceptance of differences. From a practical standpoint since the post World War II years, the civil rights movement (Menaker, 1974), and legislation including the Americans with Disabilities Act (1990) have presented many new students for college admission who hold a wide variation in credentials (Cross, 1971). As a result, colleges and universities have broadened the range for acceptable entrance requirements. This response increased enrollments 124% in the 1960s (Carnegie Commission, 1971), but as admissions increased, retention correspondingly decreased (Cross, 1976). Even though postsecondary academic support has been available since the 1800s, additional programs have developed and existing ones have increased in scope (Cross, 1976). Additional statistics reveal that students who access such support by completing developmental programs succeed in their later college classes and persist to graduation at the same rate as those students who were judged to be better prepared for college (Boylan & Bonham, 1994).

Students entering college are continuing to represent a diversity which, includes factors related to socioeconomic status, age, academic preparation, motivations, goals, values, and psychological type (Lynch, 1987). Investigating psychological type through the Myers-Briggs Type Indicator (MBTI) is one place to begin investigating the types of variations that exist among students since the concept of understanding differences among people is a central issue in type theory (Nisbet, Ruble, & Schurr, 1981; Sorensen & Hartung 1987; Kalsbeek 1987).

Since the MBTI includes questions about similarities and differences between individuals, it can be used to shed light on developmental education students and their tutors. These insights are important to higher education in general, and, more specifically, the field of developmental education but have not yet been researched. As retention concerns mount and student satisfaction is further examined, understanding effective communication and efficient learning becomes more and more crucial as universities strive to "fit" student characteristics to the particular college environment (Tinto, 1975; Provost, 1985). Academic support services, such as learning centers, are in a position to tailor learning to individuals with personalized strategies. If enough information is gleaned about the students, and the peer-tutors are trained enough to apply appropriate strategies. This may be only one piece of the puzzle so the student feels like there is an appropriate "fit" with the university, but certainly it is a crucial component.

This author posed several questions while teaching four developmental study skills classes with the hope of enabling the instructor, and the students, to better understand their learning styles. The questions included: What learning styles would be most appropriate for developmental students? How could communication and learning be enhanced through understanding student learning styles?

In addition to teaching the described classes, the author serves as Reading and Study Skills Coordinator in Ball State University's Learning Center. This position involves hiring, training and supervising college peer-tutors who give academic support in the areas of reading and study skills to Ball State students. Assisting the tutors to teach effectively and to facilitate the students' learning is paramount. Examining the learning styles of the students in the study skills classes raised questions about the learning styles of the peer-tutors in the Learning Center: Do the students who are enrolled in the developmental study skills classes differ significantly from the peer-tutors in the Learning Center with regard to their learning styles? Is there a MBTI typological difference between the tutors and the students they are tutoring? And, if so, what are the implications for the students, tutors, and tutor training programs? Tutor trainers need to know how to help tutors identify learning differences and apply strategies which will foster academic success. This research examines tutoring and tutor training so individual differences can be more clearly understood and the resulting effects can be addressed to maximize learning in the tutoring sessions.

Method

Subjects

All the individuals who participated in this study were enrolled undergraduate students at Ball State University in Muncie, Indiana. Ball State is a public, state

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The current undergraduate enrollment is 16,434 with another 2,094 enrolled in graduate classes. Ninety percent of the students are Indiana residents.

Two groups of students were involved in this study. One group of 96 students was formed from four Educational Psychology 100: Study Skills classes (EDPSY 100), and the second group of 100 students was college tutors who work in Ball State University's Learning Center.

The majority of students enrolled in the EDPSY 100 class could be described as developmental students. This is an academic designation which evolves through a self-report, being on academic probation, having low entrance scores and/or being a non-traditional student. (Non-traditional is defined at Ball State as someone who is 21 years or older and who has been out of school for sometime.) Most of the EDPSY 100 developmental students were freshmen.

The Learning Center tutors were mostly upperclassmen (juniors and seniors) and have demonstrated success in college through a grade point average of 3.0+/4.0. It was not possible to control for the difference in ages or experiences.

Instrument

The Myers-Briggs Type Indicator Form G, was administered to students in the developmental EDPSY 100 classes and Learning Center peer-tutors. The MBTI was selected because it is highly regarded and researched. It is appropriate to this study because it gives more information than just learning styles, and the literature substantiates that it can be applied to instructional settings (Nisbet, Ruble, & Schurr, 1981; Sorensen & Hartung, 1987; Kalsbeek, 1987). The inclusion of other learning style inventories could add depth to this area of research, and it is recommended that they be included in future studies.

There are four scales on which type differences can be measured: Extraversion-Introversion, Sensing-Intuition, Thinking-Feeling, and Judgment-Perception. Although most people develop skills in all eight areas, there is usually a preference to interpret the stimuli from the environment in a pattern which indicates one of the poles on each of these four indices.

Procedure

Even though the subjects responded to the MBTI at different times and places, the test was always administered in group settings by the same person who introduced the survey in the same manner. Following the group sessions, the answer sheets were computer scored at Ball State University's Computing Services. The SPSS program was used to determine differences with a level of significance of $p=.05$. The null hypothesis was:

There are no significant differences between the developmental students and peer tutors on any of the four MBTI scales.

Following the scoring of the surveys, the developmental students received verbal and written explanations of their individual MBTI category in their classroom setting. The tutors received similar verbal and written feedback on their individual MBTI category in small group seminars. Consistency was maintained by having the same person who administered the survey also provide all the feedback sessions. Information was provided not only about their own preferences, but also training was included on how to apply the strengths of various preferences to specific learning tasks.

Results

Although all of the MBTI categories were represented for both groups, there was one area of statistically significant difference. The scale which showed a significant difference between the developmental students and peer-tutors was the Judgment-Perception (J-P) scale. As determined by chi square analysis, the level was .002 when the level of significance was set at .05. In summary, the null hypothesis was accepted on three of the four scales, but rejected for the J-P scale.

Judgment Vs. Perception

The Judgment-Perception scale addresses the lifestyle question, "How do you orient yourself toward the outer world?" As a group, the developmental students responded higher on the Perception (P) scale than the peer-tutors, who were significantly different on the Judgment (J) scale. To further describe persons who characteristically live in the perceptive attitude, some of the following terms could be applied: "spontaneous, curious, adaptable, open to new events and changes, and aiming to miss nothing" (Myers & McCaulley, 1988). They strive to be flexible and keep their options open (Myers, 1987).

In the judging attitude, a person is "concerned with making decisions, seeking closure, planning operations, or organizing activities" (Myers & McCaulley, 1988). When the judging function is predominant, individuals prefer structure and want things settled (Myers, 1987).

Given the difference in how these two groups view their worlds, it is not too difficult to understand how the perceiving individuals could be weaker in study skills and more at risk academically. Conversely, the tutors who like closure and organization have applied this attitude to school work, and have been rewarded through higher grades.

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Implications for Tutor Training

Good type development relies on the accurate perception of information on which to base judgment (Myers & McCaulley, 1988). Both groups, peer-tutors and developmental students, can profit from feedback by an individual trained in MBTI theory. Insight can be gained by each group as to why they respond to the environment and to each other the way they do. For the developmental students, explanations of their behavior toward assignments and the school environment may have long been sought. The MBTI can provide reassurance that there is nothing "wrong" with them, but in certain situations the development of additional "judging" behaviors may help them to reach their educational goals more efficiently.

Since the peer-tutors are in a position to implement great change in the students' lives, it is important that they receive training from an individual knowledgeable in MBTI. The peer-tutors will then know what to do and how to do it expeditiously. It should be stressed to them that there is not a right or wrong attitude, but that in different situations, certain behaviors can bring about specific and desirable results; therefore, it is wise to be versed in both judgment and perception. It is also important for the trainer to clarify that not all tutors are J types, and not all students who come for tutoring are P types. The tutors must understand the behaviors associated with each scale so they don't make faulty assumptions.

Students who are perceiving may need instruction to change their behavior in the following study skill areas:

- ▶ time management,
- ▶ procrastination,
- ▶ organization of tasks and assignments,
- ▶ task completion,
- ▶ decision making,
- ▶ class and textbook notes, and
- ▶ punctuality.

Obviously, some of these skills overlap and additional skills may be involved, so it is important for the peer-tutor to communicate with the individual and set mutual goals and priorities. Insight gleaned from the MBTI can maximize both classroom and tutoring instruction because of the individualized information it yields.

Tutor trainers should clarify that just because these skills come quite naturally to many of the J type tutors, they should not assume that this will be the case for the P type students. Extreme problems related to academic life for the P type may include procrastination, confusion of direction/purpose, and difficulty with

decision making. The J type tutors should be reminded that students who lack these skills may possess a curiosity which can be channeled into learning. They can benefit from instruction in specific study skills, and their lack of closure does not mean they are less intelligent. Perceptive types may benefit from examining the consequences of not making decisions and coming to closure within the given academic structure. They may need concrete reminders (grade sheets, deficiency slips, information about how to calculate grade point averages, etc.) to help them. Regular appointments to monitor time management skills and spaced review sessions would also be suggestions J type tutors could make. Additionally, practice in collecting facts, evaluating them, and eliminating unnecessary options can be useful activities for students who have difficulty making decisions.

Initially, training for the J types may involve encouraging them to stay in the perceiving attitude longer and avoid premature closure. Training may also encourage J types to be more perceiving by creating various "plans to be flexible." Encourage the tutors to consider alternatives and options to instruction. Judging types may bring issues relating to control and authority into tutoring sessions. Adapting to change, either in their personal lives, or teaching styles, may be stressful for them. This is another topic to acknowledge and discuss.

Assisting J types to think more analytically or critically is a useful approach to uncover the "why" of a situation. In other words, instead of looking at a student who has a bookbag full of scraps of papers which are "class notes" and concluding that this student is headed for academic probation, consider other lines of thinking such as, "Does this student know how to get organized to study? What types of organizers can I suggest that wouldn't overwhelm him? Does he know how to take notes? Does he know how to determine the main idea during a lecture or reading in order for him to even take notes?" Tutor training should present instructional strategies in reading and study skills to P types (which may include tutors and/or students) so that they can better come to closure.

Also, during training, call in the experts! Consider other faculty members who could address related issues. For example, principles in behavioral psychology may be applied to the tutoring sessions by rewarding the students for reshaping their study behavior. Peer-tutors may need instruction in how to apply these concepts. It may even be possible to have a guest speaker from the Educational Psychology department give an inservice training to the tutors.

In summary, relevant to this topic, tutor training can be viewed as a two-pronged approach: 1) J types need an appreciation of Perception with the result of possibly modifying their behavior, and 2) J and P types both need concrete examples of how to expand their repertoire of reading and study skill strategies to counterbalance some of the potential problems associated with P type behaviors in the academic setting.

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Conclusion

It is impossible to completely predict and explain retention; however, identifying any piece of the puzzle which promotes an understanding of this difficult issue is beneficial. In a world where universities focus on retention issues, an examination of the diversity of students in order to understand their strengths and weaknesses can facilitate academic success. By assessing developmental college students and college peer-tutors through the MBTI, it was found that differences in type exist on the Judgment-Perception (J-P) scale. Developmental students were higher on the Perception scale, and peer-tutors were higher on the Judgment scale. Through the MBTI it is possible to uncover a difference between student groups, provide intervention, enhance a learning situation in the crucial area of study skills, and foster success across the curriculum.

Academic demands in college reinforce behaviors such as closure, organization and order which are reflected in the Judgment-Perception scale. These behaviors, and the related study skills, are relevant for all college students. Peer-tutors can provide personalized instruction to help developmental students better understand their behaviors and strengthen their skills. However, tutor training is important to present this topic in an open-minded manner which appreciates and respects individual differences.

It was not the intent of this study to answer all related questions. Some questions that remain include: What is the impact on the tutors of these insights? How has their tutoring changed and how has their own learning been facilitated? If the tutors have changed their strategies during tutoring, what has been the effect on their clients? To summarize, what difference has this made in the quality and results of tutoring? These questions are beyond the scope of this article. To further enrich this study, it is suggested that other learning style preferences be implemented and related to this research. Additionally, since this was researched only once with the groups described, the study should be replicated.

Jacqueline Robertson is the Reading and Study Skills Coordinator in the Learning Center at Ball State University.

References

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|---|--|
| Boylan, H., & Bonham B. (1994).
Seven myths about
developmental education.
<i>Research and Teaching in</i> | <i>Developmental Education</i> , 10(2),
7.
Carnegie Commission on Higher
Education. (1971). <i>New students</i> |
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- and new places. New York: McGraw-Hill.
- Chickering, A. W. (1969). Education and identity. San Francisco: Jossey-Bass.
- Cross, K. P. (1971). Beyond the open door. San Francisco: Jossey-Bass.
- Cross, K. P. (1976). Accent on learning. San Francisco: Jossey-Bass.
- Garnett, D. (1996). Position statement: Political liaison committee. National Association for Developmental Education.
- Kalsbeek, D. (1987). Campus retention: The MBTI in institutional self-studies. In J. Provost & S. Anchors (Eds.), Applications of the Myers-Briggs Type Indicator in Higher Education. Palo Alto, CA: Consulting Psychologists Press.
- Lynch, A. Q. (1987). Type development and student development. In J. Provost & S. Anchors (Eds.), Applications of the Myers-Briggs Type Indicator in Higher Education. Palo Alto, CA: Consulting Psychologists Press.
- Menaker, J. (1975). From school to college: Articulation and transfer. Washington, D.C.: American Council on Education.
- Myers, I. B. (1987). In A. L. Hammer (Ed.), Introduction to type. Palo Alto, CA: Consulting Psychologists Press.
- Myers, I. B., & McCaulley, M. H. (1988). Manual: A Guide to the development and use of the Myers-Briggs Type Indicator. Palo Alto, CA: Consulting Psychologists Press.
- Myers, I. B., & Briggs, K. C. (1977). Myers-Briggs Type Indicator, Form G. Palo Alto, CA: Consulting Psychologists Press.
- Nisbet, J., Ruble, V., & Schurr, T. (1982). Myers-Briggs Type Indicator: A key to diagnosing learning styles and developing desirable learning behaviors in high-risk college students. In L. Noel & R. Levitz (Eds.), How to succeed with academically underprepared students: A catalogue of successful practices. Iowa City, IA: ACT Program.
- Provost, J. (1985). Type watching and college attrition. Journal of Psychological Type. Gainesville, FL: Consulting Psychologists Press.
- Sorensen, R. C., & Hartung, T. E. (1987). Student diversity and personality type. NACTA Journal.
- Tinto, V. (1975). Dropout from higher education: A theoretical synthesis of recent research. Review of Educational Research.

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