Application for Federal Education Assistance (ED 424)

U.S. Department of Education

Form Approved
OMB No. 1875-0106
Exp. 11/30/2004

Applicant Information

1. Name and Address

Legal Name: ANKIT KOTHARI

Address: 248 , EDUCATION BUILDING

COMPUTER SCIENCE DEPARTMENT

NORFOLK (City) | VA (State) | USA (County) | 23529 (ZIP Code + 4)

Organizational Unit: OLD DOMINION UNIVERSITY

2. Applicant's D-U-N-S Number |_2_|_2_|_9_|_0_|_3_|_3_|_0_|_9_|_1_|

3. Applicant's T-I-N |_3_|_2_| - |_4_|_5_|_6_|_7_|_8_|_9_|_1_|

4. Catalog of Federal Domestic Assistance #: **84.**_3_|_0_|_5_|_T_|

Title: OFFICE OF EDUCATIONAL RESEARCH & IMPROVEMENTS

DEPARTMENT OF EDUCATION

5. Project Director: APRIL KELLY

Address: 248 , EDUCATION BUILDING

NORFOLK (City) | VA (State) | 23529 (Zip code + 4)

Tel. #: (757) 683 - 3915 Fax #: ( )_____-_____

E-Mail Address: cs410@tcbader.com

6. Novice Applicant _X_ Yes ___ No

7. Is the applicant delinquent on any Federal debt? ___ Yes _X_ No
(If "Yes," attach an explanation.)

8. Type of Applicant *(Enter appropriate letter in the box.)* |_G_|

A - State	F - Independent School District
B - Local	G - Public College or University
C - Special District	H - Private, Non-profit College or University
D - Indian Tribe	I - Non-profit Organization
E - Individual	J - Private, Profit-Making Organization

K - Other (*Specify*): _____

Application Information

9. Type of Submission:

-PreApplication	*-Application*
___ Construction	___ Construction
_X__ Non-Construction	_X__ Non-Construction

10. Is application subject to review by Executive Order 12372 process?

___ Yes (*Date made available to the Executive Order 12372 process for review):* ____/____/_____

_X__ No

11. Proposed Project Dates: 01 / 13 / 2003 (**Start Date:**) 05 / 09 / 2003 (**End Date:**)

12. Are any research activities involving human subjects planned at any time during the proposed project period?

___ Yes (Go to 12a.) _X_ No (Go to item 13.)

12a. Are **all** the research activities proposed designated to be exempt from the regulations?

___ Yes (Provide Exemption(s) #): _____

___ No (Provide Assurance #): _____

13. Descriptive Title of Applicant's Project:

EDU-C-AIDE (COMPUTERIZED EDUCATIONAL AIDE FOR INDIVIDUALIZED EDUCATION PLAN)

Estimated Funding

14a. Federal	**$ 62,164. 00**
b. Applicant	**$ _____. 00**
c. State	**$ _____. 00**
d. Local	**$ _____. 00**
e. Other	**$ _____. 00**
f. Program Income	**$ _____. 00**
g. TOTAL	**$ 62,164. 00**

Authorized Representative Information

15. To the best of my knowledge and belief, all data in this preapplication/application are true and correct. The document has been duly authorized by the governing body of the applicant and the applicant will comply with the attached assurances if the assistance is awarded.

a. Authorized Representative (*Please type or print name clearly.*)

JANET BRUNELLE

b. Title: ASSISTANT CHAIR & CHIEF DEPARTMENTAL ADVISOR

c. Tel. #: (757) 683 - 4832 Fax #: (757) 683 - 4900

d. E-Mail Address: brunelle@cs.odu.edu

e. Signature of Authorized Representative

JANET BRUNELLE Date: 12 / 05 / 02

U.S. DEPARTMENT OF EDUCATION
SMALL BUSINESS INNOVATION RESEARCH PROGRAM
SOLICITATION NO.

Name & Address of Firm	CFDA Number	Priority Number
Edu-C-Aide Old Dominion University Norfolk, VA 23529		

Name and Title of Principal Investigator	Project Title
April Kelly Project Manager	Edu-C-Aide (Computerized Educational Aide for IEP)

Technical Abstract (Limited to two hundred words in this space only with no classified or proprietary information/data)

Public School systems are required by law to provide students with disabilities a specialized education program to address the area or areas of functional weakness. An Individualized Education Plan (IEP) is the document used to define, address and track the schools efforts in implementing the specialized education program. Normally at least 30 pages in length, the IEP is a legal document making the school accountable for accommodations and services agreed upon in the IEP. With over 6 million special education students nationwide, the amount of paperwork and tracking effort required to implement an IEP is enormous. Redundant information is difficult to track and share amongst teachers and administrators. This makes it easy to make mistakes when fulfilling the requirements of the IEP. When a school fails to provide the proper services to these students it is vulnerable to costly lawsuits. Since the average legal fees of a court proceeding is between $50,000 to $100,000, the effects on the school's financial health can be disastrous. The goal of Edu-C-Aide is to reduce the number of mistakes and lawsuits against schools by providing a centralized electronic method of managing the IEP process.

Anticipated Results/Potential Commercial Applications of Results

The research in Phase I is expected to produce the design, work, management and marketing plans for an database oriented application that will manage the data pertaining to student IEP information. Phase II will develop a prototype based on Phase I specifications for proof of concept and demonstration.

Will you permit the Government to disclose the title and technical abstract of your proposed project, plus the name, address, and telephone number of the Corporate Official and Principal Investigator of your firm, if your proposal does not result in an award, to any party that may be interested in contacting you for further information?
Yes __x____No_____

The above concern certifies that it _x_ does not ___ does qualify as a socially and economically disadvantaged SBC and meets the definition as stated in this program announcement. [This is for statistical purposes only.]

The above concern certifies that it _x_ does not ___ does qualify as a women-owned small business as defined in the Definitions section of the program announcement." [This is for statistical purposes only.]

The above concern certifies it is a small business firm and meets the definition stated in section IIB; and that it meets the eligibility requirement in Section IC.
Yes __x____No_____

Table of Contents

ii) Hardware
iii) Objectives

b) Technical Objective II – Documentation

c) Phase II Timeline

5) PHASE III WORK PLAN

a) Technical Objective 1 – Development of Edu-C-Aide
i) Tasking
(1) Requirements
(a) Hardware and Software Procurement
(b) Task Breakdown

(2) Development
(a) DB Development
(b) Software Development
(i) Security and Access
(ii) User Administration
(iii) Form Designs
(iv) Form Actions
(c) Quality Assurance
(d) Testing

(3) Documentation
(a) Edit
(b) Print

b) Phase III Timeline

c) Evaluation Criteria

d) Key Personnel for Phase III

6) POST PRODUCTION WORK PLAN

a) Help Desk

b) On-site support

7) BUDGET

a) Summary

b) Detailed

8) FACILITIES

9) REFERENCES

APPENDIX A: Phase I & II Schedule
APPENDIX B: Phase III Schedule
APPENDIX C: Detailed Costs
APPENDIX D: Background of the Individualized Education Plan

1) IDENTIFICATION AND SIGNIFICANCE OF THE OPPORTUNITY

The primary goal of Edu-C-Aide is to provide an efficient manner of maintaining and organizing special education student Individualized Education Programs, also referred to as Individualized Education Plans (IEP). By creating a database of special education students IEP's, schools will be able to input and maintain IEP information, using current technology, to effectively reduce the amount of paperwork and time to complete the IEP process. This will reduce the mistakes that are made during the IEP process and will lower the risk of lawsuits associated with those mistakes.

a) Background

Public school systems are required by the Individuals with Disabilities Education Act (IDEA) of 1997 to provide students with disabilities fair access to public education (1). Upon evaluation of the student, if the student classification warrants, the school must develop a specialized education program to address the area or areas of functional weakness.

An IEP is a document used to define, address and track the schools efforts in implementing the specialized education program. More than thirty pages in length, the IEP is a legal document holding the school accountable for accommodations and services agreed upon in the IEP. Such areas as student performance, goals and objectives, special services, dates of meetings and IEP related events and progress measurement are just a few items included within the form.

With over 6 million special education students nationwide, the amount of paperwork and tracking effort required to implement an IEP is enormous. The redundant information, sometimes generated weekly, is difficult to track and share amongst teachers and administrators. According to the National Education Administration (NEA), "[teachers] feel particularly burdened by requirements to complete unnecessary or redundant administrative forms -- repeatedly supplying the same data or information that has a compliance rather than instructional purpose" (2).

Due to the high volume and detail of IEP forms, schools can easily make mistakes in carrying out the services defined by the IEP. Failure in this regard leaves school systems vulnerable to costly lawsuits. Since the average legal fees of a court proceeding can cost thousands of dollars, this can have a devastating effect on the school's financial capabilities.

b) Potential Benefit

In addition to providing an effective method for organizing and maintaining IEP's, the goal of Edu-C-Aide is to reduce the number of lawsuits against schools by providing a better way of implementing the IEP process. Edu-C-Aide reduces the amount of paperwork tracking by using a centralized database system and will cut down the amount of time spent on preparation of IEP's.

2) TECHNICAL OBJECTIVES

The main objective of Edu-C-Aide is to create a database of special education students IEP's in which schools will be able to input and maintain IEP information using current technology. Listed below are specific objectives.

1) Create a central database management system as a repository for IEP related information.
2) Develop a web-based interface for input of information and data output.
3) Incorporate a scheduling and alert mechanism to enable administrators and teachers to monitor IEP related events.
4) Allow queries against the database.
5) Provide sharing and access control.
6) Produce graphs and statistics of IEP information.
7) Produce progress reports of special education students.
8) Meet Federal standards.

3) PHASE I WORK PLAN

a) Technical Objective I – Develop a unique solution

Our first objective is to research, design and develop an application that will make the management of IEP information less prone to mistakes due to the intensive requirements mandated by law. This is accomplished by using the Internet, publications, and interviewing individuals associated with special education of K-12 graders. Initially the problem has to be identified and that an application could have an impact on solving the problem. Next, the feasibility of our application to mitigate the problem was determined. Finally, the technical aspects associated with the application were defined.

i) Define Societal Problem

We conducted research using various organizations that are related to the education of learning disabled students. We also interviewed educators, parents and legal advisors on matters relating to the IEP process. Our main sources include the U.S. and Virginia Departments of Education, the National Education Association, LD Online, and the Office of Special Education Programs. Interviews were done with Lee Butler, a lawyer specializing in child advocacy; Kim Shaedel, a special education teacher with the City of Suffolk; and Creva Rooney, a parent of a Virginia Beach special education student. Using our resources we determined that the current IEP management process overwhelms educators and when mistakes are made they lead to costly legal actions. Causes for this are the high volumes of paperwork, redundant information and the time spent by educators to properly maintain the IEP's. This led us to conclude that an application such as Edu-C-Aide could provide a solution that would mitigate these problems.

ii) Impact

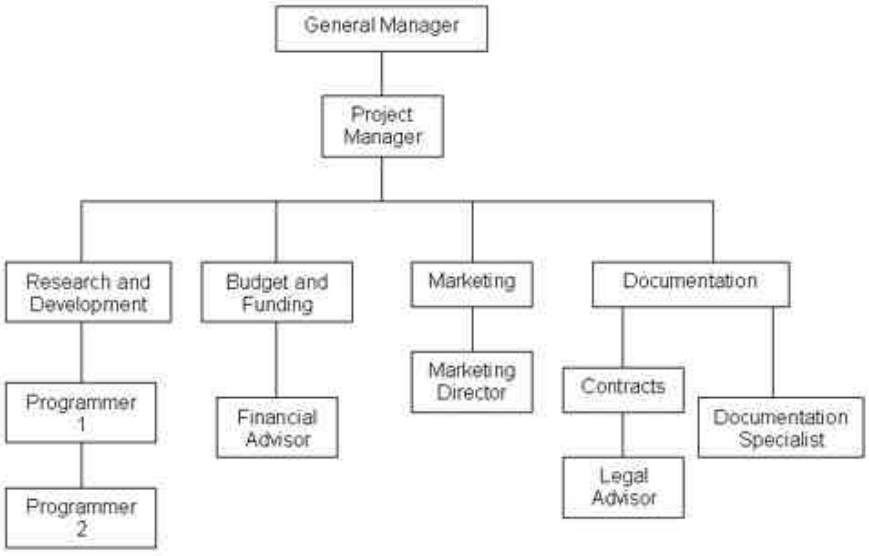
Using Edu-C-Aide would provide schools with a streamlined method for managing the IEP process. The application would benefit school systems by minimizing the redundant paperwork and time spent processing IEP's. This in turn will reduce the number of mistakes and costly legal actions.

iii) Technical Functionality

The main goal of the application is to provide a central electronic data location with an efficient management system for IEP's. This will be accomplished by using current technologies in database and web programming.

b) Technical Objective II - Management Plan

The objective of the management plan is to identify necessary positions required to complete the application successfully. Our management diagram is as follows.



c) Technical Objective III - Milestone Development

Establish the events necessary to achieve the goals, scope and solution of the application.

d) Technical Objective IV - Marketing Plan

The initial marketing strategy for Edu-C-Aide is to target school systems in the cities of Norfolk, Portsmouth, Virginia Beach, and Chesapeake. As a continuation of this strategy in the future, we will focus on additional major hubs in the Commonwealth of Virginia. We will promote and present our product at conferences related to K-12 educations that are held throughout the year. From here we will provide handouts and give demos as the opportunity arises.

According to our research, the school systems in the above mentioned cities tend to have substantial problems with providing special education services. To be exact, in the fiscal year 2001-2002, there were 120 hearings requested and 349 complaints filled in the Commonwealth of Virginia, out of which our targeted area had 10 and 22 respectively (3). According to Anna Bray Duff, the cost for one lawsuit can range anywhere from $50k-$100k and average legal costs per year range from $250k to $1 million (4). The school's investment in our product will result in alleviation of the costly lawsuits and the projected return on the investment is estimated to occur after 1-3 years. Considering this, we believe that our product will be a valuable and desirable tool for the school administration.

Based on our analysis, which is thoroughly explained in the 3.e.iii, Edu-C-Aide will realize a profit greater then $79k with just three schools purchasing the application at the base price of $140,000.

e) Design Edu-C-Aide Application
   i) Objectives
      (1) Central Data Storage

         (a) Our first objective is to develop an application that provides a central location for efficiently managing IEP information. The information that will be stored in the database pertains directly to the summarized requirements under IDEA of 1997 (5). This includes but is not limited to the following:

            1) Current student performance records.
            2) Annual goals and short-term objectives that are decided during the IEP meetings.
            3) Special educational services or accommodations as determined by the IEP.
            4) Dates of scheduled services, tests, or events with alerts to teachers and staff.
            5) Transition services as requested or needed by the student.
            6) Student progress measurement.

      (2) Web Based Interface

      The second objective will be for the database to have front-end forms that mimic essential IEP characteristics. In addition, the output will provide

frequent standard reports and additional custom information. Detailed queries for generation of reports based on individual student, class, teacher or special service will also be a feature of the database. Finally, generation of a subset of form pages for periodical review or to satisfy other requirements will be enclosed.

(3) Scheduling and Alerts

Third, the application will have a scheduling and alert mechanism to monitor IEP related events and tasks. Notifications of upcoming events and deadlines will be sent to the appropriate persons for action. Email will be the preferred notification method.

(4) Security, Privacy and Shared Information

Account based access control will only make available information that a user is authorized for. This will protect the rights of students under the Family Educational Rights and Privacy Act (FERPA) and Virginia Code 23-276.8 (6). This will be done through unique login and one way encrypted passwords.

Secure Socket Layer (SSL) will provide a secure communication connection between server and client so that electronic data cannot be intercepted and misused.

Since the data will be in a central location, the data can be viewed by multiple clients, and thus allowing the same data to be shared concurrently.

(5) Graphs and Statistics

The ability for the application to create graphical representations of information for comparison and trend gathering will be included. Also, queries based on user inputs can be conducted to retrieve statistical data.

ii) Risks and Limitations
(1) Risks

The main issues confronting the success of the application are the result of changes in technology, policy and law.

If a school system has widely adopted a specific database or security system or needs to change the system post-install, integrations issues with the application arise. The company deals with such hurdles by maintaining expert development and integration staff that work with the client as these requirements change. In addition, using “standards-based” development technology lessens the impact of these changes.

The dynamic nature of federal, state and local laws concerning IEP affect the data storage and method requirements of the system. Again, development and legal staff will be on hand to help the school systems implement new legal requirements.

As with any new process, some schools may be reluctant to implement the change from a paper forms based process to an electronic system. The help desk and integration staffs are prepared to ease the school through the transition and highlight the rewards of moving to a central managed system.

(2) Limitations

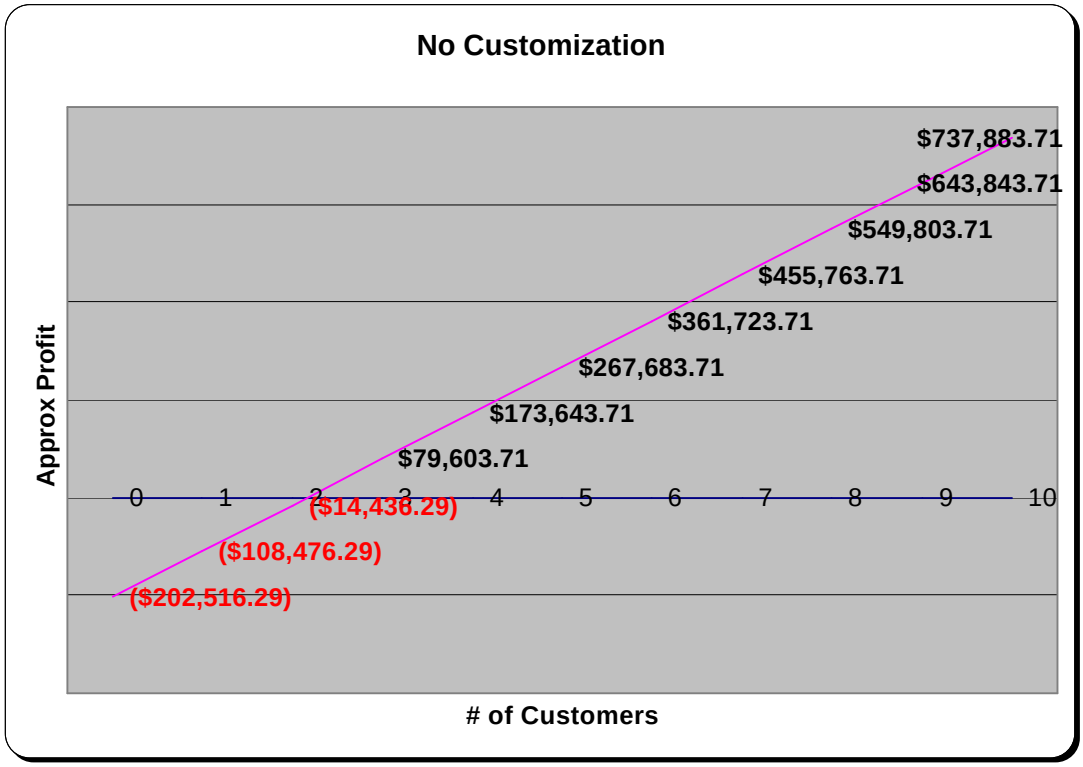
The application does not address some areas of student evaluation and data verification.

The initial evaluation of the student to determine need for special services is not done using the product. However, the product may assist staff in subsequent evaluations by providing historic and trend data on the student.

The product does not validate the data input by the staff for correctness. Improper input of information may result in incorrect or incomplete services to the student. Staff can be held accountable by logging the modification time and identity of changes.

iii) Feasibility

Cost to develop the application will be **$202k**. Cost per each customer to install and train will cost **$28k**. If we charge the customer **$100k** for the application package and **$40k** for installation and training, a total cost to the customer of **$140k**. With these values we will make a profit on our third customer.



This does not include customization that each school system will need to add for their unique requirements because of state and local laws and policies. Customization charges are based on per hour rates which have a 41% mark up on our per hour cost.

Now in the Commonwealth of Virginia, the average legal fee paid by the school system is $**50k**-$**100k** if a complaint on behalf of a student is taken to court. We do not assume this cost includes the settlement or that of expert testimony. Given the initial cost of Edu-C-Aide is **$140k**; the prevention of **3** court hearings would offset the schools expense.

3 lawsuits prevented	@ **$50k**	=	**$150k**
Edu-C-Aide	@ **$140k**	=	**($140k)**
Total Savings		=	**$10k**

The outcome is that Edu-C-Aide will not only help manage the IEP process but reduce the number of legal actions taken to court. This in turn will pay for the application on its own merits and allow the school system to spend money on other essential programs.

iv) Hardware

The installed application will be placed on the customer's resources, thus the customer will be responsible to acquire the following MINIMUM hardware requirements to use the application.

- Windows NT/2000/XP Server – application server
  1.2 GHz Processor
  512M Ram
  80G Hard Disk Space

- Windows NT/2000/XP Server – database server
  1.2 GHz Processor
  512M Ram
  80G Hard Disk Space

- Standard TCP/IP Network

v) Software

The installed application will be placed on the customer's resources, thus the customer will be responsible to acquire the following MINIMUM software requirements to use the application.

- Operating System
  Windows NT
  Windows 2000
  Windows XP

- Web Server
  IIS 5
  Apache with SSL Certificate

- Database
  MsSql 2000
  PostgreSql

- Cold Fusion MX – Professional Version

f) Key Personnel for Phase I

Our team will consist of five individuals. Below are the biographies and responsibilities for the team members.

Name	Responsibilities
April Kelly	Project Management, Research, Documentation
Sylva Girtelschmid	Marketing, Research, Web Development
Ankit Kothari	SBIR, Research, Web Development
Roger DuBois	Research, SBIR, Technical, Documentation
Terry Bader	Technical, Cost Analysis, Scheduling, Documentation

April Kelly
Project Manager and Senior Researcher

April is the Project Manager and Research Specialist for the Edu-C-Aide team. She currently attends Old Dominion University and will graduate in May 2002 with a Bachelor's degree in Computer Science and a minor in Actuarial Mathematics. She has been employed by First Union National Bank since July 2002 and plans to take next semester off to concentrate on her studies. After graduation, she plans to continue her education seeking a degree in Forensic Science.

Sylva Girtelschmid
Marketing Director and Web Developer

Sylva is the Marketing Coordinator and Web developer at Edu-C-Aide. Her responsibilities include general research and coordination of marketing efforts. Her previous experience involves internship at NATO SACLANT in Norfolk where she worked as application and database developer for the Personnel department. She is interested in simulation and hopes to build her carrier in this field. Sylva is a student at Old Dominion University from which she will graduate in May 2002 with honors, earning a Bachelor of Science Degree in Computer Science and minor in Applied Mathematics.

Ankit Kothari
Researcher and Web Developer

Ankit is a research coordinator and web developer for Edu-C-Aide. His responsibilities include maintenance of web pages and research coordination for writing the grant proposal for the SBIR. He currently is a sophomore majoring in Computer Science at Old Dominion University in Norfolk, VA and will be graduating in May 2004. Mr. Kothari is a member of the ODU Honors College. He works for Computer Science department of ODU as a research assistant and volunteers in the systems group.

Roger DuBois
System Engineer and Researcher

Roger is a Systems Analyst for Raytheon Technical Services at NASA Langley Research Center. He serves as a System Engineer and Developer on the Distributed Mass Storage System Team. His responsibilities include being a technical specialist and the team's presentation coordinator. Mr. DuBois will be graduating from Old Dominion University in December 2002 earning Bachelor of Science in Computer Science and a minor in Computer Engineering.

Terry Bader
Senior Web Developer and Systems Analyst

Terry has over 5 years experience working on government web applications. This includes database and front-end design, development and administration. He has worked for companies such as EDO Combat Systems, Northrop Grumman IT and AT&T Government Solutions. He is currently working with SPAWAR San Diego on developing public and secure web applications as well as consulting with the customer on computer based training and architecture development. Additionally, Terry serves as an Engineering Specialist for Edu-C-Aide. He is also working toward his Bachelor's degree in Computer Science at Old Dominion University.

g) Phase I Timeline

Refer to Appendix A for the complete schedule.

4) PHASE II WORK PLAN
   a) Technical Objective I - Prototype

The prototype of Edu-C-Aide will perform each functional area of the full system but without the full range of variances.

i) Software

Cold Fusion MX Studio
Stand alone version of Cold Fusion MX Server – Professional
Development version of MsSql 2000
Windows 2000
IIS 5

ii) Hardware

Windows workstation
1.2GHz+ Processor
512M Ram

40G Hard Disk Space

iii) Objectives

The prototype will show that the application's capabilities will be able to meet the project's objectives as stated in 3.e.i. The objectives of the prototype are stated below.

1) A central database will be able to hold data.
2) A web interface will be able to connect to the database to allow for viewing and modifying information stored in the database.
3) Schedules and alerts can be setup with email notifications.
4) IEP information access is limited to authorized users.
5) Secure client-server communication and programmatic security features incorporated with the application's logic.
6) Statistical data can be pulled from the database and put into a graphical representation.

b) Technical Objective II – Documentation

With the application there will be installation and configuration instructions, a user's guide and documentation for help desk support. This will be in both digital and hard formats.

c) Phase II Timeline

Refer to Appendix A for the complete schedule.

5) PHASE III WORK PLAN

a) Technical Objective 1 – Development of Edu-C-Aide

The development of Edu-C-Aide will be a 6-month effort and will be broken down into three major milestones, Requirements (1 week), Development (5 months) and Documentation (3 weeks). At the end of Phase III, the application will ready for customer installation.

i) Tasking
(1) Requirements

During this milestone the developers will review the tasks and resources needed to complete the project.

(a) Hardware and Software Procurement

(b) Task Breakdown

(2) Development

This milestone will be the most critical and most intensive. This is where the application will come to life from prototype to a real application. It will include development of the database and the front-end functionality. There will also be quality assurance being conducted concurrently with the development to keep documentation updated and to verify that the evaluation criteria are being meet.

(a) DB Development
(b) Software Development
    (i) Security and Access
    (ii) User Administration
    (iii) Form Designs
    (iv) Form Actions

(c) Quality Assurance
(d) Testing

(3) Documentation

This milestone will be simple but just as important. We will have to review and edit the documents from Phase II and make them available in digital and hard formats.

(a) Edit
(b) Print

b) Phase III Timeline

Refer to Appendix B for the complete schedule.

c) Evaluation Criteria

1) The data and structure requirements of the RDBMS will be analyzed and the appropriate normalized schema put in place. When the DBMS meets the accepted structural standard for providing database operations to the web interface this step will be complete.
2) As the web form is designed, the common included items on a standard IEP form will be constructed. Customization areas can be included as necessary. This step is complete when the features defined by the documented IEP specification for the school(s) are in place.
3) The product will complete the accepted reporting needs for progress, scheduling, attendance, event alerts and special services.

4) Detailed student queries will be provided for access to entire IEP.
5) The periodical printing of subsets of the IEP form will be in place and changes to form information will be logged for accountability.
6) Access control functionality will be in place for the administrator to control the set of staff that have a view or report of the IEP information.
7) The product will have email notification lists in place for upcoming events. Advance notice time will be configurable. A graphical event timeline will also be able to be generated.
8) Graphical progress reports, objective achievements and grades will be generated.
9) Secure communication/encryption and session management will be operational.

d) Key Personnel for Phase III

Title	Qualifications
Sr. Programmer Lead	Able to perform as Project Lead Able to conduct Quality Assurance 4+ years Web Development 2+ years Database Application Development Certified Cold Fusion Developer Experience with Windows and Unix based OS.
Sr. Programmer	3+ years Web Development 1+ years Database Application Development Prior work experience with Cold Fusion

6) POST PRODUCTION WORK PLAN

After production of the base application there will not be any need for scheduled work. However work will be performed as demanded by additional customer requirements.

a) Help Desk

We will have a teaming agreement with Bighelp, Inc. to provide a help desk for our application. This will cover all issues that may come up with the application to include use, configuration and technical issues.

1st year is included with the initial installation of the application.
Costs/Charges
$22 /hr cost to us from Bighelp, Inc.
$25 /hr charge to customer after 1st year.

b) On-site support

On-site support will be provided when customers request service or after attempting to use the help desk but their problem is not solved.

$51 /hr cost to us.
$72 /hr charge to customer.

7) BUDGET
   a) Summary
      Project Year I – Federal Funding

Phases I and II	
Personnel	$56,464
Equipment	$4,700
Supplies	$1,000
TOTAL	**$62,164**

      Project Year II – Commercial Funding

Phase III	
Personnel	$104,856
Equipment	$18,496
Supplies	$5,000
Contractual	$12,000
TOTAL	**$140,352**

   b) Detailed
      Project Year I

Phase I		
Personnel		
	543 total hours @ $51 /hr	$27,685
Phase II		
Personnel		
	564 total hours @ $51 /hr	$29,779
Equipment		
	Windows 2000 Workstation	$3,000
	CF MX Studio Software	$800
	Cox@Business Connection	$900
Supplies		
	Misc. costs and supplies	$1,000
TOTAL		**$62,164**

      Project Year II

Phase III		
Personnel		
	2 Sr. Developers	
	2,056 total hours @ $51 /hr	$104,856
Equipment		
	Cox@Business Connection	$900
	Windows 2000 Server	$5,000
	Windows 2000 Workstations	
	2 @ $2,200 each	$4,400
	Printer	$800
	CF MX Server – Professional	$800
	MsSQL 2k Server	$4,999
	CF MX Studio	
	2 @ $800 each	$1,600
Supplies		
	Misc. costs and supplies	$5,000
Contractual		
	Attorney Fees	
	40 hrs @ $300 /hr	$12,000
TOTAL		**$140,352**

8) FACILITIES

Edu-C-Aide will be conducting its Phase I, II, and III research and development operations in the Education Building of Old Dominion University in Norfolk, Virginia, 23529. The University itself will provide general equipment like desks, chairs and office supplies.

The Computer Productivity Initiative of Old Dominion University will supply additional resources. Their mission is as follows:

> "The current Computer Science curriculum must be modified to help students better understand how to apply their education to real world problems. The primary objective of the Computer Productivity Initiative (CPI) is to identify and develop these modifications, portable to any CS program. A multi-year, coordinated project is introduced into the curriculum. Students from several courses coordinate and share information concerning the broad, ill-structured project topic/problem. The courses involved in the CPI project are linked through another class. The tasking class is always one of the senior CPI courses, while the tasked classes include a sophomore and a junior level course. The two new senior level courses focus on such topics as technical research, market research, presentation skills, group collaboration, interviews, budgeting, proposal writing, presentation tools, scheduling, hardware availability research, system architectural design, requirements specification,

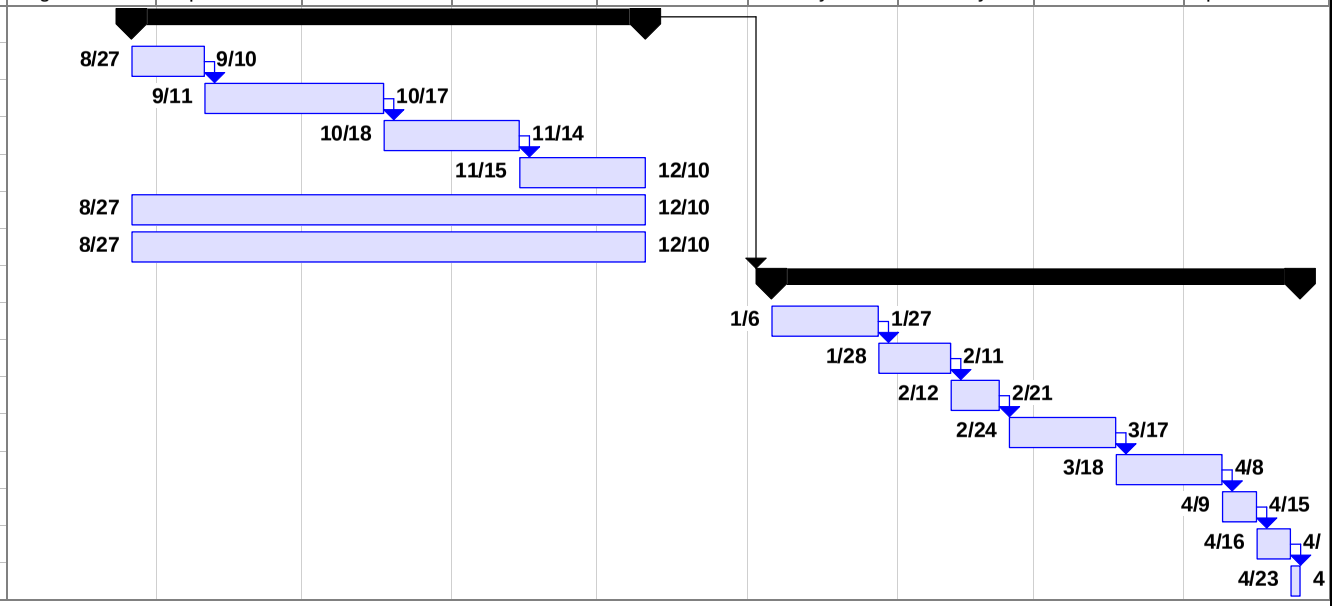
simulation, prototyping, and cost estimation. Initial feedback from our students, potential employers and an external board of advisors confirms both that the most successful graduates may not be those with the best technical education and that this effort can provide that additional dimension to the traditional CS curriculum which better prepares students to contribute to the solution of ill-structured but real problems" (7).

9) REFERNCES

1) Laws and Regulations: IDEA '97 Laws and Regs, IDEAPracties, http://www.ideapractices.org/law/index.php.
2) The National Education Association database, www.nea.org/specialed.
3) 2001-2002 Annual Report for Special Education Due Process Hearings and Special Education Complaints, Virginia Department of Education http://www.pen.k12.va.us/VDOE/Instruction/DP01-02AR.pdf.
4) "Teachers, Principals, or Lawyers?" by Anna Bray Duff for Citizens for a Sound Economy. http://www.cse.org/informed/issues_template.php/648.htm.
5) Office of Special Education Programs, http://www.ed.gov/offices/OSERS/OSEP/Products/IEP_Guide/#The%20IEP%20Team%20Members.
6) United States Department of Education, Family Educational Rights and Privacy Act, http://www.ed.gov/offices/OM/fpco/ferpa/.
7) Old Dominion Computer Science Department, http://www.cs.odu.edu/~cpi.

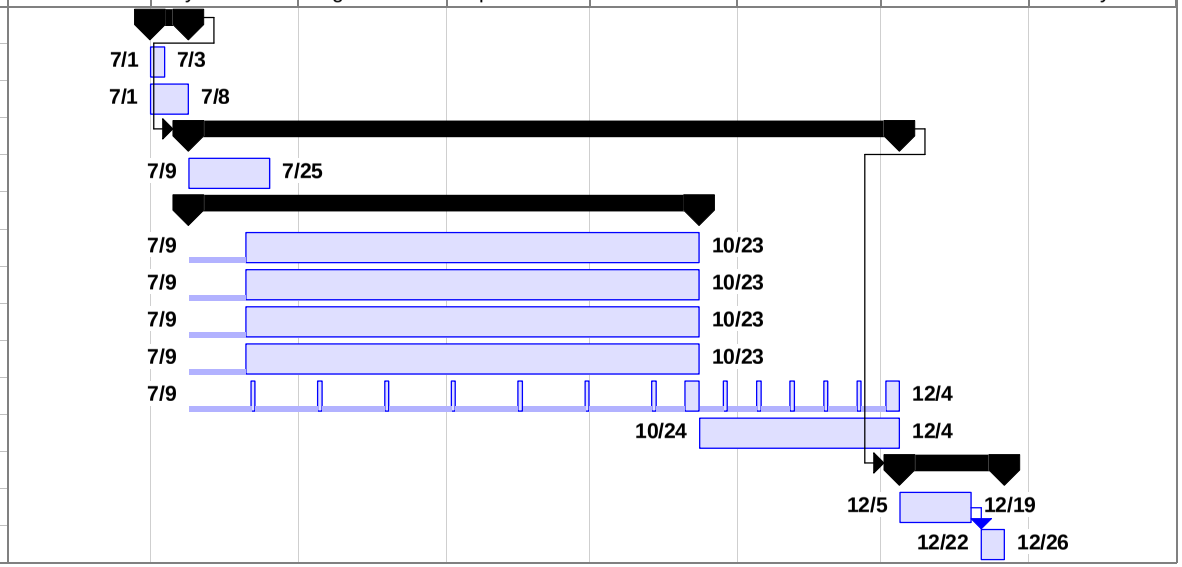
Appendix A:
Phase I - II Schedule

ID	Task Name	Duration
1	**Phase 1 - CS410**	**76 days**
2	Conceptual	11 days
3	Feasability	27 days
4	Milestone	20 days
5	Approval	18 days
6	Website	76 days
7	Project Package	76 days
8	**Phase 2 - CS411**	**79 days**
9	Creative Writing Paper	16 days
10	Descriptive Writing Paper	11 days
11	Technical Contracts	8 days
12	Budget White Paper	16 days
13	Product Prototype	16 days
14	Product User's Manuals	5 days
15	Project WWW Page	5 days
16	Development Specifications	2 days



Appendix B:
Phase III - Software Development

ID	Task Name	Duration
1	**Requirements**	**6 days**
2	Hardware and Software Procurement	3 days
3	Task Breakdown	6 days
4	**Development**	**107 days?**
5	DB Dev	12 days
6	**Software Dev**	**77 days?**
7	Security and Access	69 days?
8	User Administration	69 days?
9	Form Design	69 days?
10	Form Action	69 days?
11	QA	18 days
12	Testing	30 days
13	**Doc**	**16 days**
14	Write and Edit	11 days
15	Print	5 days



Appendix C:
Detailed Costs

PHASE I & II - Budget

Phase I		
Personnel	543 total hours @ $51 /hr	($27,686.00)
Phase II		
Personnel	564 total hours @ $51 /hr	($28,779.00)
Equipment		
- Windows 200 Workstation		($3,000.00)
- CF MX Studio Software		($800.00)
- Cox@Business Connection		($900.00)
Supplies		
- Misc costs and supplies		($1,000.00)
		($62,165.00)

Appendix C:
Detailed Costs

Phase III - Initial Development

Connection	($900.00)	Cox@Business
Server (WIN 2K)	($5,000.00)	Dell
2 Workstations	($4,400.00)	Dell
Printer	($800.00)	Dell
PostgreSql	$0.00	
CF Server MX	($799.00)	
SQL 2000	($4,999.00)	
CF Studio MX	($1,598.00)	
Lawyer Fees	($12,000.00)	Assuming $300/hr for 40 hours
Cash on Hand	($5,000.00)	
	($35,496.00)	
Personnel	($104,856.00)	2 Developers w/ 2+ Yrs Exp
	($140,352.00)	

Appendix C:
Detailed Costs

Customer Installation

Cost *			
Installation, 2 developers	6 weeks - 480 manhours	($24,480.00)	
Training, 1 Trainer	2 weeks - 80 manhours	($4,080.00)	
1 year help desk		($5,720.00)	Bighelp, Inc
		($28,560.00)	
Charge **			
Installation, 2 developers	6 weeks - 480 manhours	$34,560.00	
Training, 1 Trainer	2 weeks - 80 manhours	$5,760.00	
		$40,320.00	
Software Package		$100,000.00	
		$140,320.00	

*Cost to us per hour per developer is $51, this includes payroll, benefits and overhead
**Customer is charged $71 per hour per developer

Appendix C:
Detailed Costs

Help Services

Help Desk *

Cost	($22.00)	per hour
Charge to Customer	$25.00	per hour

On-Site Visits

Cost	($51.00)	per hour
Charge to Customer	$72.00	per hour

* No charge for calls within one year of installation. Those are included with product.

Appendix D:
Background of the Individualized Education Plan

Individuals with Disabilities Education Act History

The Individuals with Disabilities Education Act (IDEA) of 1997 came about as a result of the Education of the Handicapped Act (EHA) passed in 1975. EHA established that an IEP should be developed for each special education child with the intent to provide supplemental education services. IDEA of 1997 is an amendment to the EHA. IDEA is a law that was enacted to guide the way in which special education and related services are determined for and provided to eligible children with disabilities.

Furthermore, there are six main principles of the law defined by the National Association of State Directors of Special Education. The first is free appropriate public education (FAPE). Free appropriate public education can be defined as "special education and related services that (A) have been provided at public expense, under public supervision and direction, and without charge; (B) meet the standards of the State educational agency; (C) include an appropriate preschool, elementary, or secondary school education in the State involved; and (D) are provided in conformity with the individualized education program" according to IDEA of 1997.

The second principle is an appropriate evaluation. Appropriate evaluation is declared to mean procedures taken to determine that a child has disability. It also includes the extent to which the child will need special education and related services.

Least restrictive environment is the next principle. The least restrictive environment principle is intended to ensure that a child with a disability is served

in a setting where the child can be educated successfully. It defines to what extent child with disabilities will interact with non-disabled students in regular education environment. It also states that special education classes or removal of the child with the disability from regular education classes occurs only if the supplementary aids are not helping the disabled student achieve his or her goals.

One reason IDEA was amended in 1997 is to promote involvement by parents in their child's education. Procedural safeguards and parent and student participation are also huge principles. IDEA was enacted to incorporate and promote more parental participation in decisions regarding their disabled child's education. Therefore, the concerns of parents and the information that they provide regarding their children must be considered in developing and reviewing their children's IEP's. So, procedural safeguards are precautions that includes parental consent to evaluate a student to determine if a disability is exists, parental involvement in meetings to discuss the IEP of the disabled child, and parental involvement in student placement. A student can also be included at an IEP meeting to help determine the best possible transition services for him/herself.

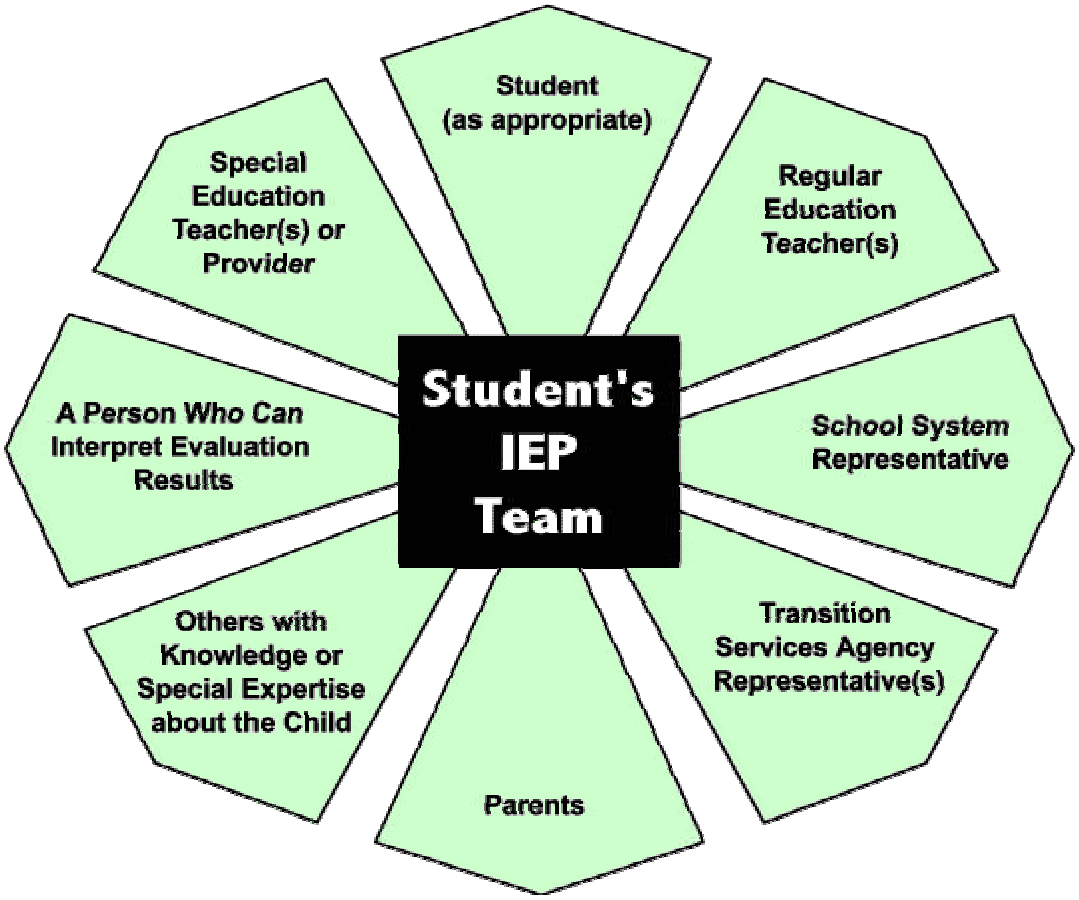
An individualized education plan is the final principle of IDEA. An Individualized Education Program is defined by IDEA to mean "a written statement for each child with a disability that is developed, reviewed, and revised . . .that includes (i) a statement of the child's present levels of educational performance . . .(ii) a statement of measurable annual goals, including benchmarks or short-term objectives . . .(iii) a statement of the special education

and related services and supplementary aids and services to be provided to the child, or on behalf of the child, and a statement of the program modifications or supports for school personnel that will be provided for the child. . .” (IDEA, Sect. 614d). A more detailed explanation of the contents of the IEP will be explained further in another section.

Background of the Individualized Education Plan Process

In order to develop an IEP for a special education student, there are few steps taken to identify those students with disabilities. It starts with recognition of the student, where the school identifies a potential disability. The schools use a process called “Child Find” in which they use certain tests to determine if a disability may be present. If the child is labeled as probable, the parents are asked if the child can be evaluated. After the parents consent, evaluation is completed within a short period of time after consent. Then, the child is evaluated within the areas of the suspected disability. An eligibility team of professionals and parents is then put together to determine the types of services the child is eligible for. The types of services a child is eligible for must be determined within thirty days from the time the child is found to have a disability. Next, an IEP team is formed to talk about the child’s needs and write the IEP. The team consists of many people, mainly experts and parents of the disabled child and sometimes the student, who can establish the best plan for special education. Once the IEP is written, transition services are resolved. Transition services are designed according to the disabled student’s needs to promote movement to higher education, training, independent living, or employment. By

using the IEP, progress can be measured in order to review and reevaluate the child. The following diagram is courtesy of the Office of Special Education Programs.



The table displays a detailed summary of the roles of each member of the IEP team according to Erik Drasgow and Mitchell L. Yell. The Transition Services Agency Representative, which is missing, is there to help determine the correct services needed for the student to proceed to higher education or other measures.

Table 1. IEP Participants and Accompanying Duties

Particip nt	Description	Mandates
Parents	Biological parent, guardian, or surro ate parent	Notify parents, with enough t ne to ensure that they have an opportunity to attend the mee ting Schedule meeting at a mutua lly agreeable time and place Arrange alternate methods fo including parents if they are unable to attend the meeting (e.g., conference call)
Local educationa agency representa ive	Representative of he school or school d strict qualified to Provide and supe ise the provision of th special education program, and Ensure that the services specified n the IEP are provid ed	Must be in attendance Must be able to commit scho l district resources May designate which teache (s) will participate Encouraged to seek input fro n student's general education teachers who are not on the EP team
Student's special education teacher	Special education teacher with prima y responsibility for implementing the EP	Should be in attendance
Student's general education teacher(s)	The general educa tion teacher participati g in the meeting shoul be the teacher who is or may be, responsib e for implementing the EP	Should be in attendance
Profession al able to exp ain the instruc onal implication s of the evalua on results	Professional with knowledge and expertise in evalua tion who may already e on the IEP team (e.g. special education teacher)	Must attend all IEP meetings Provides a clearer link betwe en evaluation results and instruc ion

Other individuals at the discretion of the parent or school	The school or parents may invite other persons to the meeting	Confidentiality rules may prevent attendance of persons not employed by the school district, unless the parents give written consent May include related services personnel, transition providers, counselors, and school social workers
Student (if appropriate)	Beginning at age 14, the student is a very important part of the IEP team because of transition considerations	The school must inform the parents that the student may attend

History of Individualized Education Programs

Regular students, gifted students, and vocational students are just a few of the types of students that currently exist in schools today. Amongst all of them are special education students, a whole other realm in education. In order to understand why an IEP is developed, we must first understand what special education is. Consistent with Definition of Terms used in Special Education by the Shiawassee Regional Education Service District, special education is any specially designed instruction, at no cost to the parents, to meet the unique needs of a student with a disability, including classroom instruction, instruction in physical education, home instruction, and instruction in hospitals and institutions, and designed to develop the maximum potential of the student. And according to the Social Security Administration, the definition of disability for children requires a child to have a physical or mental condition or conditions that can be medically proven and which result in marked and severe functional limitations.

There are several categories of disabled students including physically disable students, mentally disabled students, and students with attention disorders, just to name a few generally. An IEP is specially developed for each and every individual special education student. It is designed to help the special education student achieve the maximum level of education available to him or her. Thus, IEP's are the cornerstone of special education.

Contents of the IEP

There are many parts to an IEP; and because the law is not specific on how to set it up, each state has it's own interpretation of what it should contain. However, there are certain standard components included in an IEP as maintained by IDEA of 1997.

The first part is the current status of the special education student. This section of the IEP includes how the student's disability affects his or her performance in the general school curriculum. Then the school system can use a series of tests to assess the student. By these assessments, it is easier to establish the status of the student. In addition, it is especially important to include this in the beginning of the IEP in order to track and measure the student's progress throughout the year.

Another part of the IEP is definition of annual goals, which includes short-term objectives. Once the annual goals are developed, the IEP team, as defined above, can come up with the best strategy to obtain these goals, and define milestones for each annual goal throughout the year. This allows for measurable progress that the student, teachers, and parents can track to the end of the year;

and thus, use the information to revise the IEP. In addition to the short-term objectives, benchmarks can be used to set the level at which the child can be brought up to within specified amounts of time, which usually coincide with report cards, during the year.

The next section of an IEP consists of special education and related services and supplementary aids and services. Supplementary services are provided in the regular classroom with regular education students. This part mainly states what services are provided and what personnel are needed to provide appropriate services to keep in line with the annual goals.

As well as being involved in special education classes, learning-disabled students are also involved in the general curriculum of the school, which involves interaction with non-disabled students. So, IDEA requires the IEP to provide an explanation of non-participation with non-disabled students. This section entails the extent to which the learning disabled student will not participate with non-disabled students. It must also state that the special education student can and will participate in non-academic and extracurricular activities with non-disabled students. The least restrictive environment principle, of the six main principles of IDEA, is fulfilled here.

The next section outlines the student's participation in state or district wide tests. It must state any changes in how the tests are administered. In addition, this section must explain why a certain test is not suitable for the disabled student and what other method of testing will be used.

When services are needed to supplement the student's regular classroom education, the dates and times of when the services will start, where they will take place, and how often and how long the services will be administered must also be included. Additionally, the types of services must be stated in the IEP. Such services can include, but are not limited to, speech therapy, allowing more time for the student to complete assignments and tests, or reading tests aloud.

Lastly, the IEP must include a measurement plan. This should show how the student's progress will be tracked and how the parents can be informed of his or her performance. This is especially helpful when revising and reviewing an IEP if the goals have been attained or need to be condensed.

Although the sections described above are contained in the IEP, each state can also add even more information that it thinks relevant to accomplish the goals of the students, as long as it still abides by the law.

The Problem

The current process by which IEP's are managed overwhelms educators because of the intensive requirements mandated by law for each of the six million special education students. There are several characteristics that contribute to the problems associated with IEP's.

Paperwork redundancy is one problem associated with IEP's. An IEP is an extensive document that details a disabled student's special education strategy. Just the amount of paper used to produce an IEP can be more than thirty pages. And a copy of the IEP is often distributed to each person who is part of the IEP team, and also to regular educators who teach the disabled

student. Thus, often the same information is reproduced regularly for each IEP. And every time an IEP is reviewed and updated, even more paper is wasted because most of the time, the information stays relatively the same through the course of a week or month. Educators are required to consistently produce reports to distribute to parents of disabled students; this further exaggerates the amount of paperwork.

But paperwork isn't the only extensive effort of the IEP process. Special education teachers are burdened with the massive amounts of paperwork. According to the Study of Personnel Needs in Special Education as published by the National Education Association, "the typical special education teacher works 53 hours per week, roughly half of that time in direct instruction of students. They spend 2½ times as much time on paperwork as general educators do. Some spend as much as 14 hours a week on paperwork." And since each IEP should contain the information as stated by IDEA of 1997, schools are held liable for any information that may be missing, incorrect, or outdated.

Furthermore, with the amount of time and paperwork that goes into IEP's, the storage is also limited due to the number of special education students, in addition to files of all the other students. IEP's are legal documents and are meant to be confidential between parents and educators who create it. Therefore, schools are legally responsible for all the information.

Security can be compromised when there are so many documents to follow. Unfortunately, there is no substantially adequate method of keeping track of each page of every document consistent with each special education student.

Consequently, tracking IEP's becomes a problem that can result in lawsuits. According to the 2001-2002 Annual Report compiled by the Virginia Department of Education, out of fifteen complaints filed about the student records, nine complaints filed by parents were issues with IEP confidentiality and management.

Lawsuits

The Virginia Department of Education released a public survey to determine the soundness of special education processes. When asking the public if "the state has effective monitoring procedures to ensure compliance [with IDEA]," twenty-seven percent of responses thought that this area greatly needs improvement. Consequently, many lawsuits deal with the IEP itself and the incompetence of administrators. These issues can be anything from accessibility of IEP's by parents to IEP content to progress reports.

In the 2001-2002 Annual Report of hearings and complaints, there were 193 complaints filed and 120 due process hearings filed by parents of the more than 100,000 special education students in Virginia alone. So how much does this cost the school systems and taxpayers? Lawsuit information is not readily disclosed, obviously because of client confidentiality. However, the average cost for a lawyer can be more than $400 an hour. "The National Association of Secondary School Principals estimates large school districts with more than 10,000 students typically spend $ 250,000 to $ 1 million a year on routine legal matters. Just one lawsuit can cost $ 50,000 to $ 100,000 - a huge cost for small districts," according to Anna Bray Duff of Citizens for a Sound Economy. Those

numbers do not even include monetary compensation to families of disabled students whose rights were violated.

Erik Drasgow and Mitchell L. Yell studied 45 due process hearings parents of children with autism. They found that “school districts have lost 33 of the 45 (73%) hearings and court cases. [And that] most of the schools' losses were due to either procedural or substantive errors, or to both.” Procedural errors pertain to the IEP process whereas substantive errors refer to the actual education process.

As a result, vast amounts of money and time are being wasted on paperwork and lawsuit costs and settlements. Yet, school systems do not even flinch at the risk of being sued probably due to the fact that their budget accounts for some of those cost, the rest paid by taxes. In spite of this, each district is allotted a certain amount of money for each special education student. The National Education Association estimates that “the current average per student cost is $7,320 and the average cost per special education student is an additional $9,369 per student, or $16,689. Yet, in 2002, the federal government provides local school districts with [only] 17 percent of its commitment rather than 40 percent, or $10.5 billion less than the law specifies.” Where did the rest of the money go? That answer is yet to be answered, probably to court costs from lawsuits, but definitely not to special education.