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Using educational databases in the form of electronic portfolios: A method in coaching athletics

Annette Richelle Papin

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USING EDUCATIONAL DATABASES IN THE FORM OF ELECTRONIC PORTFOLIOS:
A METHOD IN COACHING ATHLETICS

A Project
Presented to the
Faculty of
California State University,
San Bernardino

In Partial Fulfillment
of the Requirements for the Degree
Master of Arts
In
Education:
Instructional Technology

by
Annette Richelle Papin
June 1998
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Approved by:

Dr. Sylvester Robertson, First Reader

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ABSTRACT

Since technology has become widespread within the realm of education, a need to implement interactive learning environments is a must. When students take control of their learning and assess themselves in order to achieve success, the goal of learning has been achieved.

This project describes the Constructivist Theory and research on implementing technology with the use of participatory design and how computer-assisted instruction can be integrated into the curriculum. The research also discusses a case study in which assessment strategies are being used. From these current observations, educational databases in the form of electronic portfolios can be used in all subject areas. The project was developed for members of a swim team to involve students in the process of self-evaluation.

Through the use of educational databases in the form of electronic portfolios students are able to assess themselves and make improvements. The project shows how feasible the layouts in the database are for actual use. Using a desktop database manager software, FileMaker Pro, this project will explain how technology can help a coach manage information in a timely and resourceful manner.
ACKNOWLEDGEMENTS

For Sean, may we always be like the redwood trees, everlasting. Special thanks to Dr. Sylvester Robertson whose expertise and enthusiasm helped to make this possible. Also to Dr. Rowena Santiago who gave me the original program outline that is tattered to this day and Dr. Robert Senour who is willing to read my thesis. Last but not least to Sherwin Smith, the computer whiz who could do anything in the blink of an eye what would take me a lifetime, thank-you.
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CHAPTER ONE

INTRODUCTION

Statement of the Problem

The problem for a given swim team is that data gathered by students is not individualized. At practices swimmers have routine work-outs which do not reflect individual needs. There are no individual swim programs. Students do not know where to start or where they are going. With technology, data can be managed to meet the needs of an entire swim team. Therefore, the emphasis begins on the structure of swim practices.

In the past, training techniques offered what is called conditioning. Generally work-outs reflect the conditioning of athletes. The history of training methods have always been concerned with (1) the distance to be swum, and (2) how fast the swimmer should swim that distance or how much effort he or she must put into each repeat swim. Now the phrase extends to D.I.R.T.- Distance, Interval, Repetitions, and Time (Counsilman, 1968). Due to this information, there is a necessity to keep track of the data produced by the individual event the swimmer swims and their time. A full balanced program depends upon what distance a swimmer is training for and in what phase of the program the swimmer is. For example, there should be a different emphasis at
different times of the season (Counsilman, 1968). Depending on what the swimmer is swimming, the coach can then suggest a work-out to better fit the need of the swimmer (Counsilman, 1968). With the aid of data gathered from individuals in training sessions, practice can be individualized using electronic portfolios.

Since a swimmer uses not only his or her body, but the mind while swimming (Counsilman, 1968), coaches must allow students to plan a training session that is challenging and successful. The coach must know each individual swimmer to implement a work-out that enhances the progression and motivation of every swimmer. Also, the conditions under which the swimmer will have to swim in competition must be simulated in practice (Counsilman, 1968).

Therefore, using data in the form of electronic portfolios as a tool to assess students and give them the information in a timely manner is effective and necessary. Since traditional roles are inadequate, swim members never have the opportunity to individualize their performance. With the integration of technology in the form of electronic portfolios this can be achieved (Stroot & Bumgarner, 1989).

Purpose

The purpose of the project is to individualize student competition and practice information so it can be managed effectively. Individualized performance is a valuable tool in assessing student performance so they have a starting point
for which to improve. Information such as this is the foundation of any successful swim program. Student performance would be maintained by using a database in the form of electronic portfolios. Students would be able to assess themselves and see their progress through the data that they retrieve from swim meets. Certain layouts would provide swimmers with their individual swim times and strokes. Also, students would have access to what techniques to improve.

Since traditional methods have not done justice to what students really need, "authentic assessment," which is the application of skills, knowledge, and attitudes to real world situations have become extremely important in physical education (Mohnsen, 1997). When students see their individual performance through electronic portfolios, it becomes a "purposeful collection of work that demonstrates student effort, new learning, emerging insights, progress, and achievement over time" (Mohnsen, 1997). Therefore, data that maintains and updates individual performance is what helps swimmers to become successful. Implementing data in the form of electronic portfolios in athletics is successful.

Project Overview

The project would be structured so that each beginning work-out would cover the individuals' attitudes and goals for the season followed by on going assistance in evaluating individual progress. At practices, the coach must routinely
time the events of the swimmer and keep a log of them (Counsilman, 1968). A way to organize practice sessions is to divide swimmers into groups according to their ability and swim events (Counsilman, 1968). This again works for swimmers who are already identified and allows the coach to create the groups according to the information obtained on any given swimmer. It is also good practice to allow the student to design their own work-outs and evaluate them weekly. Also, the interest that the coach has for each swim member becomes evident by the coach knowing all the various times the swimmers have swum in their workouts and races. The coach should know each swimmer's record and talk to them each day. The coach should set high goals that are consistent with the swimmer's perceived ability (Counsilman, 1968).

When students have the opportunity to see their growth over time, they can begin to establish specific goals that motivate them to keep improving. When this does not happen students do not have a basis for starting out and the knowledge gained becomes obscure. Providing students with greater opportunities to learn can be time consuming, but with electronic portfolios one can help students to realize their ultimate potential and show them exactly how to get from one point to another. "The use of electronic portfolios greatly facilitates the process because the portfolios are electronic, students and teachers can track and access large amounts of data from a variety of formats in a short period of time" (Mohlsen, 1997). When students are encouraged to do
so, they meet their own expectations as well as the teacher’s, which is the goal among members of a swim team. Thus, in the end a successful swim program should allow the student the desire to achieve as much as possible from within themselves as individuals.

Project Design

The project is designed with four layouts. The first consists of student names, type of stroke, and time in races. The next layout covers all the strokes the swimmer can swim, the time in races and what improvements are needed to perform successfully in certain strokes. The last two layouts are for the swim meets. The first layout tells the swimmer what to swim in a given swim meet. The next layout keeps track of individual split times during relays. All layouts help swimmers to individualize their work-outs and lessen the stress of swim meets by organizing the data to put top swimmers in the relays and individual events.
CHAPTER TWO

LITERATURE REVIEW

Technology Integration

The need to research where we are in technology today is the key factor in being able to assess possible uses of technology integration. According to Quality Education Data (1989) reports that 76,395 of the 79,693 public schools in the United States (over 95%) have two or more microcomputers. When the total number of microcomputers is calculated, there are 1,596,715 units, or an average of 19.8 units per school and an average micro density of 25.4 students per microcomputer. In addition, an ELECTRONIC LEARNING (1989) survey of state education agencies revealed that 77% of the states are planning new technology-related programs, and 93% of the states provide in-service computer education for certified teachers.

While computer use in education is accelerating, the need to move beyond "computer literacy" training and integrate computers more fully in the teaching and learning process is receiving more attention. The next question whether or not computer-assisted instruction can be integrated into the curriculum draws upon the needs of the learner. In athletics, especially, any programs should reflect the performance outcomes. Research investigating the impact of technology on learning and teaching suggests that
technology can support and facilitate constructivist teaching (Sheingold, 1991; Collins, 1991; Fisher, 1989). For example, in classrooms with technology, researchers have documented a shift away from directed teaching (Dwyer, Ringstaff & Sandholtz, 1991; Schofield & Verban, 1988); a move toward a more cooperative social structure (Dwyer, Ringstaff & Sandholtz, 1991; Brown & Campione, 1990); and greater emphasis on assessing student products, progress, and effort (Schofield & Verban, 1988). This method of coaching will enhance performance and give athletes a clear structure for achievement.

Constructivist Teaching

In order to reform today's schools, educators must frequently focus on the need to reemphasize student problem-solving and higher order-thinking skills. An emphasis that will require a dramatic shift in the form of instruction that is routine in American classrooms (Holmes Group, 1990; Carnegie Forum on Education and the Economy, 1986). According to Bruner, (1966) "As far as instruction is concerned, the facilitator should try and encourage students to discover principles by themselves." The Constructivist Approach to coaching is very realistic in the twentieth century. Giving students the opportunity to construct their own projects is essential to their self-esteem. One of the major principles of the Constructivist Theory is that "Instruction must be concerned with the experiences and contexts that make the
student willing and able to learn" (Brunner, 1960). Children need frequent opportunities to "critically evaluate what they read, express themselves clearly in verbal and written forms, and be comfortable with various forms of technology that can serve as tools for thinking" (Brown & Campione, 1990).

To facilitate the development of these skills, learning and coaching must shift from a knowledge transfer process instructionism to a knowledge building process constructivism (Collins, 1991; Sheingold, 1991). When given a task that the students themselves are responsible for, they are more willing to participate because they are in control of their learning. More recent work, Brunner (1990), has expanded the theoretical framework to encompass the social and cultural aspects of learning which is the ultimate goal of technology in the curriculum.

In constructivist learning environments, learning is more collaborative. Students are active members in taking control of their own knowledge, rather than memorizing facts. When swim programs reflect individual performance the outcome is controlled by the learner. Although technology can pave the way for change and can help coaches move toward a more constructivist approach, the professional journey from instructionism to constructionism is long and often tedious.

Generally, coaches begin using technology in traditional patterns of instruction. It takes years before coaches progress to the point in which they truly integrate technology and use these tools to their fullest potential.
In order to do this successfully, coaches must critically evaluate the needs of the user when designing computer programs. The user must have input and responsibility for integrating the technology aided instruction into learning outcomes. When athletes collaborate with the coach to create a constructivist learning environment, a knowledge of the user's performance goals becomes the basis to establish the program.

Design and Development

When coaches begin to integrate technology, one of the key focuses of technology integration is the design and development process. When using technology within any curriculum there are a few criteria that must be established before designing computer programs. Design and development are concerned with several subtopics: needs assessment, task analysis, learner characteristics, message design, product development, and motivational strategies.

The role of design and development seems to be emerging as a distinct area within instructional design and development and has established itself within the field of educational technology (Ely, 1990). Thus, when establishing computer programs, allowing students to assess their needs and draw information can help them attain their goals. In order to be effective in the design and development process when introducing computer programs, there are reasons to investigate the use of participatory design when
implementing new technologies in the classroom (Breuleux & Silva, 1994).

Participatory Design

At any given time a teacher at the high school level may be asked to coach and design a sports program. Thus, the following techniques will help coaches to design programs that directly relate to student performance and outcomes. First, the introduction of any new technology into classrooms is difficult due to statements made about them in the past (Breuleux & Silva, 1994). In any case, industry where technologies are introduced without worker participation fail to succeed. Research on the use of participatory design in industry suggests that perhaps coach and even student involvement may enhance a better understanding of the needs of the user with the integration of the technology with everyday tasks (Breuleux & Silva, 1994). Therefore, during swim practice students are aware of their individual performance and can improve upon them on a daily basis.

Second, since many new projects may depend on collaborative learning activities, the decision of the coach to combine resulting tasks with use of technologies requires an approach that maximizes their participation and cooperation. Only then will the user understand and embrace the technology. Allowing students to work directly with the program and see the goals that have been established is the basic foundation of athletics. Since participatory design
relies on full cooperation between users and systems analysts, it offers involvement between coach and student (Breuleux & Silva, 1994). When users get to import data and see their individual performance levels an increase in outcomes becomes motivating.

Third, a participatory design approach has the potential to create a setting where opportunities for the researcher to share in and understand the concerns and perspectives of the participants become possible. Participatory design methodology insists on interaction between researcher and participants (Breuleux & Silva, 1994). Thus, feedback from the user becomes essential to the success of the program and everyday performance of an athlete.

Fourth, participatory design directly relates to current trends in education where attention to the learner and teacher, as opposed to the expert, instructional methodology, or technology, is primary (Breuleux & Silva, 1994). When data can be stored in an efficient manner using computers for athletics this bridges the gap between the needs of the swimmers and the objectives the coach has established for each individual team member. One of the ways to introduce technologies is through staff development.

Staff Development

Many coaches are reluctant to use a computer versus traditional pen and paper. Creating interactive learning environments where students are in control of their learning
is the basis for improving one's own success. Students thus "become the expert as they gather information and learn how to use it as well as how to gather more" (Lazlo, 1995). When coaches demand specific outcomes for students, they become the goals that coaches teach and assess. The basis for setting up information should be student-oriented (Smith, 1997). Since many teachers will be asked to do sports programs at any given time, implementing any technology in the classroom raises many issues that must be discussed.

First, one must bring the technology into the curriculum. Students must be the center of the learning environment and discover the power of the learning and teaching tool. Thus, in any curriculum, availability of hardware and software becomes the major issues. Once, that is established, teacher participation is the next goal. Schools who have the technology often do not use it to the fullest potential. Most schools simply have computers for individual students to do word processing (Burnett, 1994). Thus, schools need to take a look at the curriculum and follow certain guidelines for each computer use.

The next issue for efficient computer use, is to get coaches involved in planning. The curriculum plan once established should cover the purpose, methods, and expected results of the curriculum development effort. The objective should focus on the all subjects and evaluation methods (Yocam & Wilmore, 1992). Coaches who become actively involved in planning and implementing technology programs are carried
beyond the barriers of their beliefs to new conceptions about the constructivist nature of learning (Yocam & Wilmore, 1992). This allows the participating teachers to learn about the constructivist nature of learning by building their own knowledge about the facilitation of interdisciplinary curriculum projects, the effective uses of technology, and the application of alternative methods of assessment (Yocam & Wilmore, 1992). Coaches need to take what they've learned for their own situations by preparing plans that they will implement in their own programs. One of the ways to introduce technologies is through electronic portfolios.

Educational Databases in the Form of Electronic Portfolios

The need for computer based assessment alternatives, researchers and educators seem to agree, for instance, that computer use leads to more time on task, greater student motivation, more peer assistance, less directive teaching and more teacher facilitation, and more frequent group projects (Baker, Gearhart, Herman, 1990). Researchers and educators agree that there is a need for computer based assessment alternatives, and that computer use leads to an effective tool for self evaluation. Interest in computers in the area of fitness have lead to the design of many programs.

One of the most useful applications includes storing, sorting calculating and reporting data to efficiently report individual progress (Stroot & Bumgarner, 1989).
Thus, when researching types of computer use one must consider the following categories: programming, text and graphics, anticipation of user errors, independent student operation, methods of instruction, feedback, amount of user control, appropriateness of content, accuracy of content, compatibility with goals and objectives, management of information, program testing capabilities, and documentation (Stroot & Bumgarner, 1989).

Educational databases in the form of electronic portfolios are at the forefront in helping students evaluate themselves. "There is a dramatic movement in the field of educational measurement to go beyond standard, multiple choice tests to develop measures which better represent instructional outcomes and enable students to demonstrate skills" (Baker, Gearhart, Herman, 1990).

Using educational databases for learning in the form of electronic portfolios "can be considered a collection of information grouped and structured to enable learners to meet instructional goals (Sweaters, 1994). When this is accomplished, the learner must, then, access the valuable information and must meet the goals set forth from the given information. The instructional tasks of setting objectives, checking prerequisite learning, setting learning tasks, and providing practice and assessment must be provided by a teacher or learning system (Sweeters, 1994).

The most important aspect of educational databases in the form of electronic portfolios is whether it contains
information learners need to know and how they find it without difficulty. When the database is created in the hopes of getting learners to assess themselves and use the information in a meaningful and timely manner, the objectives of the database have been met (Sweeters, 1994). There is exciting potential for educational databases in the form of electronic portfolios in all subject areas. The goal is to develop computer-based portfolios. The range of product types that can be stored in hypermedia formats is virtually unlimited (Baker, Gearhart, Herman, 1990).

When implemented in the correct way, educational databases in the form of electronic portfolios will enhance the assessment process in all areas of education. Technology is a valuable tool for students to take control of their success rate, especially in the field of athletics. Athletes need to assess their performance throughout the season. Creating educational databases in the form of electronic portfolios on all members of a swim team, will enhance their performance and success.
CHAPTER THREE
STATEMENT OF OBJECTIVES

The goals and objectives of the project are that students will be able to identify their strengths and weaknesses in swim techniques. This is done by adding a category in student portfolios on what swimmers need to work. The next goal is to analyze information and apply it to their swim practices. When students are aware of their improvements they are more likely to see themselves progressing when they do better in races. From the portfolios and individual swim times, students can individualize their work-outs so their performances in swim meets improves. Students know what their times are so they can keep monitoring them and increasing their times. When students access information via individual swim times students will increase their swim times due to current and updated information. Thus, students can get together and work on the same techniques and time one another in their particular stroke. With the swim meet layout, students will be informed of what strokes they are swimming in a swim meet. Many times students are misinformed on what strokes they are swimming in a given meet. Thus, anxiety levels increase and swimmers often complain. With an individualized sheet on each swimmer, anxiety levels go down producing a productive program.
CHAPTER FOUR
DESIGN AND DEVELOPMENT

Step 1: Identifying Reasons for System Analysis

The reason for this project is to implement a new idea using technology. In order to individualize instruction in competitive swimming, a database system is needed. Increasing swim times so students are successful is the main reason this system should be constructed. Students must know how they can be better swimmers and what techniques they need to strengthen. Using the data to create and match individuals to their perspective goals allows students to clearly understand where they are as competitive swimmers and what they need to do in order to increase their general understanding of how to improve in the sport of swimming.

Step 2: Defining the Scope of System Analysis

The new system will include one Macintosh computer, preferably a lap-top with the FileMaker Pro system. The swim team coaches from every high school will be able to view the information on their own students. This information will be collected at the particular school sites. The current method of keeping track of individual performance is non-existent. The organization adopts the method of writing the swim event down and the students that are going to race in that
particular stroke. This usually takes place either on the bus, the day of the swim meet or on the previous day. The method of placing students in races either according to preference of the swimmer or what is left over, causes confusion and frustration for the swimmers. Many last minute decisions are made throughout the season and is a problem for the swimmers. This confusion continues and students do not have a clear idea of what exactly they are swimming and how to improve their techniques. When the program is established, the athletes begin to focus their individual ability which keeps improving and performance outcomes are met. This system would save numerous hours of trying to figure out who swims what stroke and their times. Every swim meet would run smoothly and performance levels would increase due to the updated information that the swimmers access. The cost constraints on the other hand are simply broken down into available hardware and software programs.

Step 3: Identifying Sources of Study Facts
The existing system depends on manual labor that is tedious and time consuming. The only data that is distributed is a schedule for swim meets. When talking to the students, a need for individualized stroke mechanics and their improvement in events becomes a constant concern. While discussing with them about alleviating some of the problems, the students suggested the need for instruction based on their performance in the swim meets.
An ongoing chart of times and techniques for increased improvement is a must. Given this information, students can excel in the areas that pertain to them. Athletes would have the opportunity to view their strengths and weaknesses and be able to assess themselves and increase their performance. When swim members take control of their individual goals, motivational levels increase and more races are won. The design would meet the complaints so often voiced about improvement and performance. Currently there are no other systems available.

Step 4: Considering Frameworks for Fact Gathering

The system would be maintained by the coaches and individual students who would be accountable for keeping their own performance levels. Thus, when a student receives a time for a race that student records it into the database and knows what they need to work on in order to improve their time in the next race. Also, athletes become the designers of their own practices through the information that the database manages. Students begin to analyze the data and establish work-outs that reflect their performance outcomes which will bring about tremendous increase in motivation to excel.

Thus, the same students who put the information in the computer understands the outcome and why the process enhances their abilities in swimming. Weekly updates of this information allows students to evaluate their performance on a first hand basis. When the system is accessed by the swim
coach for modification, immediate feedback becomes available. Each school would be responsible for their own information and data. Since other systems are extremely outdated, getting the needs met of the students becomes the essential priority for the information. The information would remain within the athletics department for the students' and coaches' use.

Step 5: Analyzing Study Facts and Feasibility

Since the program requires one Macintosh computer and FileMaker Pro software, this application is feasible due to the low cost of the equipment for the coaches' use. Under Title IX monies, mandated to the schools for equity of sports, each department has access to computers and therefore can manage such a data system. Since the technical end is at the school sites already, software applications can be installed at minimal costs. Operation begins when the coaches become aware of the system's potential to manipulate the data. Once this is established, the program will run smoothly. The program could be implemented for operation as soon as the software is ordered and the coaches are aware of the capabilities of FileMaker Pro. The training of coaches to use the system would take minimal time due to the ease of use that the program offers. Thus, the scheduled implementation of the program begins at the beginning of the practice season. The training of the coaches should be before the season begins. Therefore, training to learn the program in the fall would be optimal.
Technical Feasibility

The reasons for conducting this particular systems analysis is the fact that students need individualized instruction and need to know their improvement and performance levels, especially in sports. The only potential source of facts are the students themselves. Since students' needs compose the whole structure of the database, the data is compiled directly from the students. Therefore, given that athletes base their ability on the proper stroke mechanics to increase their performance, creating a valuable assessment tool that gives athletes the ability to receive individual feedback that is both timely and accurate, enhances the outcomes of the athletes.

Economic Feasibility

Since the information remains at each individual school site and within the athletic department, the swim team becomes the direct beneficiary of this knowledge. Training for use of FileMaker Pro would be the responsibility of the coaches. The training could be made available with Title IX monies. In this case, the coach for the males would have their own database and the females would have their’s.

Operational Feasibility

The facts that need to be collected are received directly from the students, such as individual swim times and strokes of each student. In order to receive this
information, constant monitoring of practices and swim times in races is essential. Viewing each student’s strokes and teaming them with their peers, who also swim the same stroke, can be manipulated in the database to analyze who needs improvement on what. The idea here is to allow students to constantly evaluate themselves and learn from others. Ways to give swimmers the opportunity to learn from their own mistakes is crucial to the learning process. When a database system is established around the specific needs of the students, athletes become the creators of their own goals.

Schedule Feasibility

When updated materials are passed out regularly, students increase their times and recognize themselves as true competitive swimmers in comparison to others. Each week the students are handed a layout that lets them know what time they are trying to beat, who their swim buddies are, how many yards they swim in practices, and on what mechanics they need to work. The swim members begin to become aware of the ability to improve their stroke mechanics, which directly relates to their success in swim races. The students also have the option to swim in other events after analysis of the data to determine what times would be successful in competition against opponents. On many occasions, swimmers are placed in events at the last minute and are not sufficiently prepared to do so. The schedule for the students would be upgraded so the swimmers are prepared for races.
Formative Evaluation

This project was designed through assessing the needs of the learner. When creating any program, determining the problems and centering the design around the user, gives the user a sense of control over their learning. The original project was created using FileMaker Pro version 2.1. When students used the database they complained about the fact that they had to figure out the method of changing the page by clicking on the layout list in the corner. This was time consuming and was not user friendly. The introduction of FileMaker Pro version 3.0 offered drag and drop buttons to make the database much more interactive and user friendly. This was a must for swimmers who were accessing the information and needed the extra support quickly. The procedure of designing the database with buttons became much more effective. The feedback became vital to the success of the project (See Appendix A).

The next issue was that students wanted the ability to go anywhere in the database to view any layout for their data. The layouts were designed to show all the buttons of possible areas and title pages for each layout. The students appreciated this consideration and could move freely among the screens at any given time (See Appendix C). Also, by adding a print and quit button to each page students were able to have a copy of the information and be able to leave the program at any given time. The last revision was the individual splits in relays (See Appendix E).
Students wanted to know what their splits were in order to compete with each other and have the opportunity to create the fastest swim team to compete for state finals for the chance of ultimate success.

The strengths of the project were the individual portfolios that gave students the opportunity to individualize their swim practices and consistently increase their scores (See Appendix B). The individual splits during relays was the ultimate motivator and many swimmers practiced extra to compete for the number one spot. The swimmers took control of their ability to access the information and could work to improve from the information presented. Swim members began to become aware of their ability level in a certain stroke and would focus on improving their stroke mechanics which directly related to their ability to improve swim times in races. The swim members would help one another if someone was better at a specific stroke and would train together and time one another in swim practices. The team became motivated to help each other and the morale was much stronger. When swim members were held accountable to increase their individual times to help the overall status of the team, gave each member a feeling of the team concept. When individual times began to increase the overall score, the swim team began to improve which motivated everyone on the swim team to excel.

The limitations of the project were making sure the data gathered from swim meets was accurately put in the database.
When dealing with swim times, it is crucial to get the times down to the split second. This becomes a problem when swimmers are trying to keep track of splits and trying to write them down. The transfer of the times to the database might become obscured and misleading. The ideal situation would be to upload the splits directly from the timers into the database.

The recommendations for future projects are to devise a system where times are automatically imported directly from the swim races to the database. The current method involves students being assigned to a buddy who is responsible for getting the accurate times recorded during a given swim meet and then recording that time into the database on the ride home or the next day. This is time consuming and sometimes due to human error, inaccurate. Since getting the right times recorded are so important to assess students' results, and for their ability to plan for improvement, a more accurate method of scoring times are important. When working with data, students need to be aware of their own abilities to access them.
APPENDICES
APPENDIX A: MAIN MENU

WELCOME TO
ANNETTE PAPIN'S
SWIM TEAM DATABASE

PORTFOLIOS
RELAY TIMES

INDIVIDUAL SWIM TIMES
MEET INFORMATION

Quit
Print
APPENDIX B: PORTFOLIOS

Portfolios

Stroke
100 YARD BACKSTROKE
RACES 1:02
PRACTICE 1:10
Best Time 1:00

Skills
MORE FLIP TURNS
OTHER STROKES AND TIMES
50 BACKSTROKE 53

Main Menu

Quit
Print

File Edit Mode Select Format Script Window

2:09 PM

28
## APPENDIX C: MEET INFORMATION

![Meet Information Screen](image)

**Meet Information**

<table>
<thead>
<tr>
<th>Name</th>
<th>SOPHIA ALLEN</th>
<th>J.Y. or VARSITY RELAY EVENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>School</td>
<td>San Bernardino</td>
<td>50 BACKSTROKE .43</td>
</tr>
<tr>
<td>Level</td>
<td>Varsity</td>
<td>100 YRD BACKSTROKE KE</td>
</tr>
</tbody>
</table>

<table>
<thead>
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**Main Menu:***
- Individ. Swim Times
- Relay Times and Splits
- Portfolios
- Quit
- Print

**Quit Button**

**Print Button**

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APPENDIX D: INDIVIDUAL SWIM TIMES

Individual Swim Times

Felicia Allen

STROKE: 200 Freestyle
TIME IN PRACTICE: 2:45
TIME IN RACES: 2:00
BEST TIME: 1:58
SLOWEST TIME: 2:50
OTHER STROKES: 50 BACKSTROKE: 43
APPENDIX E: RELAY EVENTS AND SPLITS

<table>
<thead>
<tr>
<th>Meet Date</th>
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</tbody>
</table>

### Relay Event Times and Splits

**Boys Varsity**
- B. YAR. 200 MEDLEY T 01 Time
  1. 2.
  3. 4.
- B. YAR. 200 MEDLEY T 02 Time
  1. 2.
  3. 4.
- B. YAR. 200 FREE T 01 Time
  1. 2.
  3. 4.
- B. YAR. 200 FREE T 02 Time
  1. 2.
  3. 4.

**Boys Jr. Varsity**
- B. J.Y. 200 FREE T 01 Time
  1. 2.
  3. 4.
- B. J.Y. 200 FREE T 02 Time
  1. 2.
  3. 4.
- B. J.Y. 200 MEDLEY T 01 Time
  1. 2.

**Girls Varsity**
- G. YAR 200 MEDLEY T 01 Time
  1. 2.
  3. 4.
- G. YAR 200 MEDLEY T 02 Time
  1. 2.
  3. 4.
- G. YAR. 200 FREE T 01 Time
  1. 2.
  3. 4.
- G. YAR. 200 FREE T 02 Time
  1. 2.
  3. 4.

**Girls Jr. Varsity**
- G. J.Y. 200 MEDLEY T 01 Time
  1. 2.
  3. 4.
- G. J.Y. 200 MEDLEY T 02 Time
  1. 2.
  3. 4.
- G. J.Y. 200 FREE T 01 Time
  1. 2.
  3. 4.
APPENDIX F: I.R.B. DOCUMENT

Consent Form

I, ________________________, agree to participate in the research which is being conducted by Annette Papin. I understand that this participation is entirely voluntary; I can withdraw my consent at anytime without penalty and have the results of the participation, to the extent that it can be identified as mine, returned to me, removed from the experimental records, or destroyed.

The following have been explained to me:

1. The reason for the research is to determine if the use of an electronic portfolios enhances performance outcomes of athletics. The benefit I may expect from using the software is to increase performance.

2. The procedure I will be involved in includes viewing the software program written by Ms. Papin.

3. This participation will not in any way affect how I am evaluated in my regular class and will involve no risks of any kind.

4. The results of this participation will remain confidential, and will not be released in any individually identifiable form without my prior consent, unless required by law. The only personal information I need to supply the investigator are the strokes that I swim and their times. Any other information will be given on a voluntary basis.

5. There are no foreseeable risks involved with this study. The benefits the participant can expect to receive are: (1) new knowledge about increasing performance (2) a preview of some new capabilities of educational databases in the form of electronic portfolios.

6. The investigator will answer any further questions about the study either now or during the course of the investigation. Please contact the investigator regarding questions about the participant’s rights or injuries.
Signature of Participant

Signature of Investigator

Signature of Participant’s Parent

Date
REFERENCES


