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# An Initial Exploration of a Virtual Personal Fitness Course

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## Abstract

The incredible growth rates and increased enrollments in virtual physical education (VPE), otherwise known as K-12 online physical education, continue to rise. VPE has the potential to service K-12 student learning in independent and self-paced curriculum. However, VPE brings a healthy skepticism among the profession. To this point, it is difficult to make an accurate assessment of VPE due to the lack of research in this area. The purpose of this study was to examine the extent to which a virtual personal fitness course met the criteria set forth by the *NASPE Initial Guidelines for Online Physical Education*. This study explored the first and largest VPE program in the southeastern United States. Teacher and administrator interviews, the school's website, the course shell, annual student external evaluations, and a comprehensive assessment conducted by Florida Tax Watch were used to complete a thorough content analysis.

## Introduction

Virtual schools (K-12 online schools) were largely unheard of just a decade ago. As of fall 2010, 48 states, plus the District of Columbia, offered online learning opportunities for students (Watson, Murin, Vashaw, Gemin & Rapp, 2010). Online K-12 physical education, or virtual physical education (VPE), is no different. Physical education is one of many content areas that are offered by virtual schools. The National Association for Sport and Physical Education (NASPE) *Shape of the Nation Report* (2010) concluded that 22 states allowed required physical education credits to be earned through VPE. Moreover, the virtual school explored in this paper offered their personal fitness "course shell" in over 25 states and at least 14 countries. It is evident that VPE continues to grow exponentially.

To date, there has been little empirical research in VPE (Buschner, 2006; NASPE, 2007). A review of literature surfaced only one peer-reviewed published paper (Daum & Buschner, 2012). The mix-method study described the current status of high school online physical education teachers in the United States. The online teachers (n=32) were surveyed and interviewed. The authors found that a majority of programs emphasized health-related fitness within the curriculum. Of the courses surveyed, 72% did not meet the recommendation of 225 minutes of physical education (NASPE, 2004). Interview respondents expressed support as well as opposition with regard to online physical education through open-ended questions.

In 2007, NASPE released a position paper with the first guidelines for VPE. The guidelines were tailored for virtual physical education, based on the Southern Regional Education Board *Standards for Quality Online Courses* (2006) and *Checklist for Evaluating Online Courses* (2006). In the position paper, VPE is seen as a viable option when designed and implemented appropriately for high school physical education students. This document includes a checklist to assist teachers and administrators in determining the quality and effectiveness of VPE courses. This tool has yet to be implemented in the literature on virtual physical education.

Due to a lack of a research and theoretical rationale in virtual schools, any recommendations are preliminary (Barbour & Reeves, 2009). Smith, Clark, and Blomeyer (2005) write:

Practically speaking, describing all the many structural, administrative, technical and theoretical variations (theories of learning) that characterize online learning today is a formidable challenge. If we were to wait until an adequate and inclusive descriptive framework were developed before starting to design new online learning research, we might be waiting for a very long time indeed. (p. 78)

The *NASPE Initial Guidelines for Online Physical Education* is the only framework that has been accepted by the profession. Therefore, the researchers used this lens to frame the examination of the virtual personal fitness course. Teacher and administrator interviews, the school's website, the course shell, annual student external evaluations, and a comprehensive assessment conducted by Florida Tax Watch (FTW) were the evidentiary sources used to complete the analysis.

## **Methodology**

This section includes a description of the site selection, course description, data collection and analysis procedures. Data were gathered, analyzed, and presented in a manner that will be useful to not only researchers, but administrators and practitioners as well.

## **Site Selection**

The virtual school investigated in this study is the country's first state-wide internet-based public high school initially founded in 1997. It provides K-12 curriculum to state residents for free and globally serves students through tuition-based instruction. During this study, the school had over 154,000 course enrollments and 71,750 individual students. Just over 70% of the students who enroll in the virtual school also attend face-to-face (F2F) schools. There are more than 100 courses for students to choose from in a wide variety of subjects. Courses are accepted for credit and are transferred back to the student's local school. All courses are fully online and accredited by the Southern Association of Colleges and Schools and the Commission on International and Trans-Regional Accreditation.

## **Virtual Personal Fitness Course**

The virtual personal fitness course was chosen for this investigation because it was the first of its kind and because of its continued growth. In 1999, a proposal was developed between the Orange County School Board and Florida State University (FSU) to develop a fully online personal fitness course from the state adopted personal fitness textbook. FSU selected a doctoral student to work on the development of the curriculum and administer the course (Jackson, 2000). There were approximately 20 students enrolled in the first course. At the time of this study, over 19,000 students took this online personal fitness course to fulfill the personal fitness high school graduation requirement.

## **Data Collection**

Multiple data sources were reviewed over a six month period for this study. These include: a) transcripts of interviews and logs of follow-up emails and phone calls; b) the school web site; c) the “course shell” (accessed with approval of virtual school); d) annual student external evaluations; and e) a case study by Florida Tax Watch (2007) the *Final report: A comprehensive assessment of Florida Virtual School* (2007). Each source is described below.

## **Interviews**

The researchers interviewed four employees from the virtual school: two instructors (Mr. Sheets and Ms. Washington) and two administrators (Mr. Hudson and Ms. Madison). Pseudonyms were used to protect the identity of the interviewees. Mr. Sheets is a 45 year-old with 15 years of experience in F2F and nine years in virtual schools. Ms. Washington is a 50 year-old with 20 years of experience in F2F and nine in virtual schools. Each instructor has been with the virtual school from its beginnings. Mr. Hudson is a 40 year-old with teaching and administrative experience in traditional and virtual schools. Ms. Madison is 34 year-old having similar experiences. Both have served the school for approximately three years and supervise VPE instructors. Each interview was followed up with phone calls and emails for clarity and member checking.

## **School Website**

The website is an information center for students, guardians, educators, and researchers. Visitors can access resources such as: the history of the school, course offerings, FAQs for guardians, employment opportunities, and external evaluations. They can also access current research conducted within the school. The site is also the students’ login for their course and provides social networking functions (i.e., Facebook, Twitter, and Youtube).

## **Course Shell**

The researcher was permitted access to the personal fitness “course shell”. The shell is the course site used to deliver the curriculum to students and it cannot be manipulated by teachers. The shell has a “Wellville” city motif and includes eight modules. The course includes projects, activity logs, fitness tests, pacing charts, practice quizzes, interactive games, instructional videos, external websites, tutorials, and a final examination. There are a total of 53 assignments to be completed by students.

## **Annual External Evaluations**

For over a decade the school has conducted annual external evaluations with each of its stakeholders. The stakeholders include students, guardians, schools, and districts. All evaluations can be retrieved through the school’s website at (<http://www.flvs.net/areas/aboutus/Pages/AnnualEvaluations.aspx>).

## **Florida Tax Watch: Comprehensive Assessment**

Florida Tax Watch (FTW) is a private, non-profit, non-partisan research institute. Its mission is to provide citizens and public officials of the state with high quality, independent research. In 2007, FTW conducted a comprehensive analysis of the virtual school studied in this paper in order to answer fundamental questions about its efficacy. The viability of the school was examined as an alternative to

F2F schooling with regards to student outcomes and cost-effectiveness.

## **Data Analysis**

The evidentiary sources outlined above were used to perform a qualitative content analysis of the virtual personal fitness course using the *NASPE Initial Guidelines for Online Physical Education* (2007) as the lens to deduce the data (Patton, 2002). Patton (2002) defines qualitative content analysis as “any qualitative data reduction and sense-making effort that takes a volume of qualitative material and attempts to identify core consistencies and meanings” (p. 453). The ten subgroups outlined by the framework are: a) student prerequisites; b) teacher prerequisites; c) curriculum and instruction prerequisites; d) assessment; e) class size; f) time allocation; g) availability of community facilities; h) equipment and technology systems; i) program evaluation; and j) students with special needs. Each subgroup has multiple descriptors that provide the frame to situate each data source.

The data collection and data analysis phases overlapped (Behrens & Smith, 1996) while performing the content analysis. As data were being collected the researchers systematically searched for and arranged each source for discovery and understanding (Bogdan & Biklen, 1998). All evidentiary sources were methodically examined and triangulated with regard to the framework over a six-month period. The researchers kept an audit log and returned to many of the data sources throughout the collection and analysis process to verify findings. No negative cases were found.

## **Results**

The results are organized with respect to the *NASPE Initial Guidelines for Online Physical Education*. The following sub-sections identify findings from the ten subgroups included in the framework.

### **Student Prerequisites**

Students who elect to take a VPE course should have permission from guardians, teachers, and administrators. Students should also have an adequate level of knowledge and skill in both physical education and technology prior to enrolling in an online course (NASPE, 2007). For this particular course, each student is required to self-report baseline, mid-, and post-fitness tests. However, the course does not offer a way to demonstrate competency in movement concepts or motor skills.

Students are afforded multiple forums for navigation through technology (e.g., videos, webinars, compatibility software checks, support staff, etc.). Moreover, the teacher is required to speak with each student and guardian before the course in a “welcome call”. Guidance counselors, technical support staff, and remediation faculty are also available for each student throughout the course.

The school expects the guardian to be a “partner in education.” While no F2F meetings take place, guardians give permission for their child to participate in the virtual course and have access to a “Guardian Account” that gives 24/7 access to their child’s submitted and graded assignments. The guardian receives regular email updates, a minimum of one telephone call per month, and monthly progress reports (FL Tax Watch, 2007). Mr. Hudson believes there are many more individual interactions between virtual school teachers and their students and guardians. He said:

“The beauty of what we do is...often we compare standards or expectations of traditional brick and mortar learning to online learning, but I don’t know if that necessarily implies one-on-one. Face-to-face interactions often take place in group

settings, where virtual school teachers' interactions with students and parents are often individualized.”

Before a student enrolls in a virtual course, the school provides multiple ways to ensure students and guardians know the expectations of successful students. Students and guardians have opportunities to meet face-to-face with counselors, attend webinars, and complete online surveys in which students can gauge if online learning is a suitable option for their style of learning.

Once enrolled in the course students have multiple ways to access help with technological problems. Student external evaluations reveal the teacher is usually the first point of contact for the student with regard to technology issues. The school also has a technical support staff accessible 24/7 through the school website. Student evaluations report that 60% of students indicate no technical problems with courses. For the 40% who reported technical problems, most were resolved within 24 hours.

Most students feel technologically capable upon enrollment. Student external evaluations show 97% of students believe the school's learning management system is either “very easy to use” or “easy to use”. Further, 99% of respondents indicated that accessing courses are “very easy” or “easy”. Student external student evaluations conclude convenience and ease were recurring comments when students were asked what they liked best about their online learning experience.

Florida Tax Watch reported (2007, p. 60), “the longer it took a student to complete a course, the lower the final grade was likely to be”. The students enrolled in this virtual school can choose a pace that best fits their needs. The first, “accelerated pace”, means the student completes approximately two modules per month. The “traditional pace”, means the student completes approximately one module per month. The last option, “extended module “, requires teacher and guidance counselor approval. Guardians are required to sign off on the pace their child chooses. Task sheets are also available for students as a tool for time management. Task sheets include a time-oriented list of tasks that students need to complete to stay “up-to-date” in the course. Mr. Hudson confirmed the document is not graded by teachers, but is a recommended organizational tool.

Academic integrity is a “non-negotiable” as outlined on the website (<http://www.flvs.net/areas/flvscourses/Documents/AcademicIntegrity.pdf>) and echoed by Ms. Madison. Each student and guardian signs a contract as part of the enrollment process. Students and guardians are reminded of this policy throughout the semester through the welcome call, webinars, posts on the course site, and emails. Specific to the VPE course, guardians are required to authenticate seven activity logs with their signature. The signed activity logs are then faxed directly to the teacher.

An etiquette tutorial, called “netiquette” is available for all students on the school website and reinforced by the teacher. Ms. Madison confirmed that teachers expect students to use proper grammar and punctuation in all correspondence and assignments. Furthermore, all students are urged to sign their first and last name, not to forward chain letters or spam, and to think before sending.

The teachers interviewed concur that safety is paramount. The virtual personal fitness course has a variety of assignments for students to understand the safety of movement and exercise. Module 1.07 Stretching Safely, 2.04 Warm up Cool down, 2.05 Common Injuries Project, and 5.02 Muscular Training Safety Precautions give written directions and video demonstrations for movements and exercises.

### **Teacher Prerequisites**

NASPE (2007) states, “an enriching online learning experience for all students requires a certified physical education teacher who is experienced in the traditional classroom and gymnasium setting”(p. 6). The teachers at the school are licensed in the state in which they teach, and most have experience in F2F schools. Both administrators interviewed confirmed there were 75 VPE teachers employed full time by the school, 34 of which acquired or were working towards a Master’s degree, five were National Board certified, and one held a Ph.D.

Teachers in this virtual school have the ability to modify the home page of their course. Ms. Washington stressed, “The home page is where teachers can personalize the course. It is where students can see that there is a person on the other end of the screen.” While each teacher has the flexibility to share or not share personal information, Ms. Washington confirmed cases in which virtual personal fitness teachers role model (through use of pictures and videos) how they are physically active.

Administrators evaluate the teachers three times a year. The evaluation consists of a portfolio, including: a) quality and timeliness of feedback given to students; b) student external evaluations; and c) “walk troughs”. Feedback is evaluated formatively and summatively by school administrators. The administrators look for specific, congruent feedback embedded within the course content. Administrators see strength in having access to the archived feedback given to the students. Administrators are also able to review archived student external evaluations of each instructor. By conducting live virtual “walk throughs”, administrators can continuously view and/or listen to the feedback an instructor gives. “Walk throughs” may occur in a synchronous webinar session, phone call to the student/guardian, or a course site review.

The teachers’ evaluations drive their professional learning. Professional learning comes mainly through online “bite sessions” (10-30 minute sessions on specific teaching strategies) given by peers and content experts, one annual F2F workshop, and professional conferences. Professional learning is both content specific and related to best practice in virtual school instruction. Mr. Hudson explained teachers are expected to be “thought leaders” in their content area and present at conferences, but are not required to belong to professional organizations.

School policy requires each teacher to be available from 8:00 a.m. to 8:00 p.m., seven days a week. Teachers are required to make call-backs or respond to emails within 24 hours. Communication occurs through telephone, email, video, texts, discussion boards, chats, blogs, wikis, and podcasts. Both teachers interviewed clearly explained the school does not expect teachers to be tied to a computer “all day, every day”, but recognizes their instructors have a much more “blended life as learning never ceases”. Mr. Sheets indicated that students’ peak times for completing course work are 9:00 p.m.-11:00 p.m. during the week, and Sunday afternoon.

### **Curriculum and Instruction Prerequisites**

The course shell is comprised of 53 assignments aligned with both state and national standards. The personal fitness course content includes the following: a) safety practices; b) technology applications; c) assessment of health-related fitness; d) components of physical fitness; e) health problems associated with inadequate fitness levels; f) psychological values of physical fitness (including stress management); g) evaluation of physical activities in terms of fitness value; h) fitness program design; i) biomechanical and physiological principles and their application to maintaining and improving health-related physical fitness; j) nutrition; k) consumer issues; and l) benefits derived from

participation in physical activity. The curriculum is delivered through text, narrated slides and video, email, oral components by phone, activity logs, discussion boards, webinars, chat rooms, interactive games, practice quizzes and a final examination.

The VPE course has a city motif, called “Wellville: Where Wellness is a Way of Life”. It is sectioned into eight modules. The modules include cognitive components and physical activity logs using health-related components of fitness. The activity logs to be completed by the students require 45 minutes of moderate-to-vigorous physical activity 3-5 days per week (135-225 minutes a week). Activity logs also focus on muscular strength and endurance, flexibility, or body composition, depending on the focus of the module. Mr. Sheets explained the functionality of the “course shell” allows for teachers to guide students in prescribing an exercise plan after a pre-fitness test. Then, throughout the semester the teacher continues to assist each student with his or her exercise plan. All physical activity logs are signed by guardians and faxed directly to the teacher. The teacher follows up with periodic phone calls to each student and guardian, attempting to hold each student accountable to his or her exercise plan. Ms. Washington states, “By strategic questioning during phone calls, it is fairly easy to point out a student who is lying.” Both teachers interviewed confirmed their ability to have students complete a F2F evaluation if they do not think the student is truthful in reporting fitness data.

Students are also required to interact in discussion board activities and complete multi-media-based projects. For example, in one discussion board students describe a “stressful situation” and write about how they handled it. Each student is then required to reply to two students giving them positive or constructive feedback on how the situation was handled. In another assignment, students create a slideshow, an informational handout, or a video reporting the negative effects of cardiovascular disease. Both teachers interviewed believe it is important for students to interact and encourage each other for social support.

### **Assessment**

Accountability for learning and student motivation are two reasons for assessment (NASPE, 2007). The NASPE guidelines stress the importance for in-person and/or alternative assessment. The VPE course investigated, while all online, has a variety of assignments. These include written assignments, activity logs, discussion boards, quizzes and exams, and oral components. Oral components take place in the form of a phone call and are designed for relationship building, checking for understanding, and providing feedback to students. Both teachers interviewed reiterated the importance of the oral components. Teachers at the school keep detailed electronic logs of their conversations with each student. The logs are used to assist the teacher in recalling what was previously discussed with each student. It is also a way for administrators to evaluate the archived feedback that the teacher is giving. All written assignments and activity logs are assessed with rubrics.

An examination of the course shell reveals that the VPE course assesses physical fitness specific to flexibility, aerobic capacity, and muscular strength and endurance in two distinct ways. First, each student is required to self-report baseline, mid, and post fitness tests. Secondly, weekly activity logs are completed for all modules. Teachers guide students throughout the semester to set goals on completion rates of physical activity. The rates are calculated and discussed as part of the oral component. As stated above, both Mr. Sheets and Ms. Washington shared that “fake” activity logs are easy to point out, especially when approaching students and guardians about this in the oral component. The course does not require or offer physical activity devices such as heart rate monitors or pedometers. Mr. Sheets explained, “The school is free for the students who are state residents. We

do not charge our students for the course.” When asked about a “loaner” program he said, “This would be very timely and difficult to keep up with. We have students all over the state.”

### **Class Size**

The *NASPE Initial Guidelines for Online Physical Education* state, “The number of students taking an online physical education course can and does affect the quality of teaching and learning” (p. 7). The student-teacher ratio at the school is approximately 175 students per teacher per day according to the administrators interviewed. This number varies due to the open enrollment process adopted by the school. Students can sign up for a course at any time. If there is no waiting list, the student is enrolled after completing the welcome process. The teacher is expected to instruct students who are in different modules at the same time. Ms. Washington reports, “It is not out of the question to have students in all eight modules.”

### **Time Allocation**

According to the NASPE guidelines (2007), students and teachers must commit sufficient time to the online course. Students can choose the pace in which they complete the course (i.e., accelerated, traditional, and extended) with the assistance of teachers and counselors. Students are assessed on a regular basis through a variety of assessments to ensure comprehension and course integrity. Teachers at the virtual school send an average of 38 emails per student per course. The average number of student “log-ins”, school-wide, for an “A grade” was 180. The mean number of logins for the “health/physical education” course was 159, the lowest of all subject areas taught by the school (FTW, 2007).

Teachers interviewed stressed the importance their personal time management skills. Ms. Washington explains, “We work nights and weekends. We can’t call students back during the school day to help them with a problem. They are in school. It is important that we meet the students’ needs when the students need them met.” The administrators echoed a similar sentiment. Ms. Madison stated, “Teachers new to online teaching struggle with time management skills.”

### **Availability of Community Facilities**

NASPE guidelines (2007) reference that limited access to facilities may exist and pose problems for students who are required to perform physical activity. In the case of this virtual school, it is a fully online program offered globally. There is no measure set in place for the VPE teacher to monitor the availability or safety of community facilities.

### **Equipment and Technology Systems**

All stakeholders (i.e., districts, students, teachers, and guardians) must share the responsibility of assuring that equipment and technology are accessible, working properly and safe (NASPE, 2007). While some students may have access to physical monitoring systems (i.e., heart rate monitors, pedometers, accelerometers), this hardware is not provided or required for students taking a virtual personal fitness course. Video technology is used to demonstrate physical education skills. For example, Module 5 shows the correct demonstration for a leg squat. The video shows multiple angles and highlights key points in text call outs. Equipment is not provided by or required for students to purchase. The curriculum allows for, and demonstrates through video, alternative equipment if weights are not available. For example, in the video referenced above (leg squat), the demonstrator is

holding gallon milk jugs filled with water to add intensity to the exercise.

### **Program Evaluation**

From its beginnings, the school has contracted with an external evaluator to gather feedback (in the form of annual evaluations) from all stakeholders. The school posts a summary of the annual evaluations available to the public (<http://flvs.net/areas/aboutus/Pages/AnnualEvaluations.aspx>).

Both administrators commented that VPE specialists review curriculum on a three-year cycle to make necessary modifications. The teachers interviewed for this student stated that at any time they are able to submit ideas for course improvement.

### **Students with Special Needs**

The school has a specific Adaptive Physical Education IEP or 504 Plan VPE course designed for students with disabilities. The full-time VPE teachers hired to teach this course are recognized specialists in adapted physical education and provide accommodations and modifications for each student. Ms. Washington revealed students enrolled in this course are given special consideration in terms of course pace.

### **Discussion**

The purpose of this study was to investigate a virtual personal fitness course to determine the extent to which it met the *NASPE Initial Guidelines for Online Physical Education*. Through deductive analysis the researchers found that the VPE course met or surpassed most of the NASPE guidelines. The VPE curriculum is aligned with national and state standards. However, the physical activity requirement falls short of the 225 minute recommendation (NASPE, 2004). This course is a “shell” that cannot be manipulated by instructors. This guarantees that each student receives standards-based content. The school updates curriculum and courses on a three-year cycle.

Students had limited technological issues. Thomas (2008) reports similar findings in a survey of virtual school students (n=2,000) in states within the Southern Regional Education Board. When students participating in online education have been surveyed, virtual schools have received positive feedback, including technological issues.

According to *Keeping the Pace* (Watson, Gemin, & Ryan, 2008), 75% of teachers used phone and email for frequent guardian-teacher communication, but to date little research has been conducted in relation to guardian involvement in virtual schools. In this study, the researchers found that students and guardians have multiple ways to communicate with the teacher. Guardians have access to their students’ work through a guardian account. The teacher is required to make multiple phone calls to each student’s guardian. It is also protocol for the teachers to respond back to a parental concern within 24 hours.

The VPE instructors were experienced and certified in their subject area. Similarly, in a 2008 study, Rice, Dawley, Gasell, and Florez found that 99% of their respondents were credentialed teachers, and only one percent of teachers were new hires. New online instructors tend to underestimate the amount of time required when planning and implementing online courses (Buchanan, 2000). Comments from administrators and teachers interviewed for this study confirm this finding.

Socialization in online programs can be categorized as: a) interaction with a teacher or other adults within the online class; b) communication with other students within the online class; c) online communications and activities facilitated by the school but outside of class activities; d) activities that involve bringing students together in physical locations; or e) social networks and Web 2.0 technologies (Watson & Gemin, 2008). Watson & Gemin's (2009) follow-up report found that many online programs, as well as some states, have established communication requirements and/or policies for online teachers. These include such items as: a) student email should be answered within 24 hours; b) the teacher should initiate a phone call to each student at least monthly; c) student discussions should be actively facilitated; d) guardian calls should be held monthly; and e) weekly or monthly F2F meetings should be held with a mentor or supervisor. This school meets or exceeds all the requirements above with the exception of F2F meetings.

In the age of differentiated learning, a student-centered approach to physical education should be welcomed. Not every high school student enjoys being required to participate in a traditional physical education class, especially in the middle of the school day. Further, not all students are comfortable with performing physical activity in a class setting, but may be successful in a more private setting. If designed and implemented appropriately, VPE may serve as an alternative and appropriate method of instruction. Virtual physical education may promote relevance and positive attitudes for some students. VPE has been in existence over a decade, and its global presence warrants the exploration and understanding of its many facets. Until there is more extensive research, it cannot be concluded if the online approach to physical education is an effective way of teaching physical education.

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