

Using a Virtual Learning Lab for Teaching and Learning: A Case Study for Meeting the Needs of Gifted Middle School Students in a Rural School District

Executive Summary

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INTRODUCTION

According to the 2012 Keeping Pace study of online and blended learning, which provides a snapshot each year of the KINDERGARTEN TO GRADE 12 online learning across the United States, blended schools, and blended programs in school districts, are a quickly-growing segment of KINDERGARTEN TO GRADE 12 online learning (Watson, 2012). Districts offer these options with the intention of expanding access to courses that might not otherwise be available for students, improving the quality of instruction and reducing costs that are often associated with more traditional education.

This is an executive summary of *Using a Virtual Learning Lab for Teaching and Learning: A Case Study for Meeting the Needs of Gifted Middle School Students in a Rural School District*, which provides an easy digest of a longer more intimate look at a blended online learning environment. An external evaluation was performed to answer questions focused primarily on the quality of learning and teaching, and the achievements of learners. The purpose of the study was to provide stakeholders and their audiences with an authoritative, in-depth well-documented explication of the Virtual Learning Lab at Suwannee Middle School, in Live Oak, Florida and information about its effectiveness. It provides useful information about an emerging model for others who might want to implement a virtual learning lab, which infuses a place-based brick-and-mortar style classroom with online instruction.

Case study methods were used to investigate a virtual learning lab (VLL) in a rural school district that was created in 2011 as a way to better meet the unique needs of exceptional students who are considered gifted. A description of the lab is provided along with some background, research methods, and summaries of results.

BACKGROUND

The case described, typifies a Florida Virtual School (FLVS) VLL model for allowing public school students to obtain learning in a blended learning environment. In Florida, school districts are using these labs to ease class-size limits, help students fulfill graduate requirements, and improve districts' academic results. According to FLVS, currently there are 317 of these labs in Florida, which are offered in a computer lab or other classroom with on-site lab facilitators. VLLs are a migration from fully online learning, into a physical school environment where students can learn using the Internet to deliver instruction and content, while being supervised. Eighteen (6%) of these units serve students in rural areas, like the one this study focuses on. Most VLLs serve secondary students and there is an average ratio of 25 students per lab. While there are some exceptional students in various labs, there are only two labs in Florida that were created exclusively for acceleration. We focus on the only one of its type: *A VLL designed exclusively for acceleration with exceptional middle school students who are gifted.*

This case study focuses on a VLL at Suwannee Middle School in Suwannee county school district, which is located in a rural region of northern Florida, about midway between the cities of Tallahassee and Jacksonville. The county seat is Live Oak, FL and the district encompasses four elementary schools, one middle school, two high schools, and one combination school. Suwannee Middle School had 1,048

students enrolled for the 2010-11 academic year. In the same year the school had over two-thirds of students who qualified for free-and-reduced lunch and a 34 percent minority rate. By state standards, the school received a school grade of C. Fifty-eight percent met satisfactory level of success for reading, 55 percent for math, 73 percent for writing and 44 percent for science (FLDOE, 2012).

METHODS

A case study approach was chosen as an appropriate method because it allowed us to see and understand as much as possible about the types of interactions between the teachers and learners in a successful blended-learning setting, without having to generalize beyond it (Stake, 1998). Procedures relied primarily on steps supported by the literature and suggested by Creswell (2007), Stufflebeam (2001), and Stake (1995). Data collecting was extensive, drawing on multiple sources of information, including all six of the sources recommended by major researchers in the field, such as Yin (2003), Stake (1995), and others. The study was performed over three months, beginning in November 2012.

A SITUATED PERSPECTIVE

For Florida in 2011, Governor Rick Scott signed into law the Digital Learning Now Act (2011) which requires school districts to establish virtual learning options, and authorizes customized and accelerated courses to be delivered in traditional school settings by personnel providing direct instruction through a blended virtual and physical environment. Additionally, the law requires all incoming ninth grade students to complete an online course as part of the 24 credits required for graduation. Such legislative demands in a time of budget deficits and infrastructure issues have increased the adoption of virtual and blended learning as a means to satisfy school choice options (Rauh, 2011).

In an increasing number of cases, blended learning is emerging in small, rural communities. A blended classroom can be a cost beneficial method of providing courses to students that would otherwise require having the critical mass of students needed to justify a teacher's salary. In terms of small communities, blended learning for talented and gifted students is increasing nationwide, especially with regard to meeting the need for gaining access to accelerated coursework.

Blended Learning and Gifted Education

According to one of the first studies to collect data on and to compare fully online and blended learning in KINDERGARTEN TO GRADE 12 schools—while fully online courses have higher student enrollment than blended courses, it is possible that blended models have greater potential in KINDERGARTEN TO GRADE 12 schools than fully online models (Picciano, Seaman & Sloan, 2009, p. 2). This finding is based on results from a national survey of school district administrators, published by the Sloan Consortium. Another finding, from the report indicates that many school districts continue to have concerns about the quality, student readiness, and staff development related to online education. Picciano et al. (2009) cite another study commissioned by the North American Council for Online Learning, stating “The blended

approach combines the best elements of online and face-to-face learning. It is likely to emerge as the predominant model for the future—and to become far more common than either one alone” (p. 5).

Although online and blended models are becoming more popular over time, there remains little empirical research regarding the role and effectiveness of this type of program for KINDERGARTEN TO GRADE 12 online learners (Cavanaugh Gillan, Kromrey, Hess, & Blomeyer, 2004; Hasler-Waters, & Leong, 2011; Means, Toyama, Murphy, Bakia, & Jones, 2009; Patrick & Powell, 2009; Rice, 2006). This is particularly true when attempting to measure any differences between blended and face-to-face teaching and learning.

FINDINGS

Historical Progress and Need

Students’ gifted services for KINDERGARTEN TO GRADE 12 before 2009-10 in Suwannee School District consisted mainly of consultative and pull-out services with the district’s one gifted specialist. The specialist went from school to school and worked with teachers/students on enrichment activities, in which opportunities for the investigation of supplementary materials were given. According to the District Director of Student Services/School Psychologist, the amount of time that students were able to participate in gifted programming was minimal at that point. She reflected that many felt this model was too distracting, especially at higher grades, as it required the gifted students to catch up on missed school work and disrupted their regular school day. As a result, in 2009-10, the district began offering other options. At Suwannee Middle School, this started by offering gifted students a “non-academic” elective class for one period a day, instead of just pull-out services. Parents and students had mixed reviews. Many felt it was unfair for the students to have to give up the other more appealing electives that were available.

About that time, FLVS approached the school district and school to talk about the possibilities for using a virtual learning lab at the middle school, which seemed to be a perfect fit. According to the principal, FLVS was selected both because of the good reputation it had for VLLs and that it offered challenging courses that could provide their students with the experience needed to be ready to take AP and dual enrollment courses later, in high school. The students and parents liked it too, especially because of the different course choices that would be available. Not only was it beneficial that many different high school courses would be available, but multiple courses could be offered at the same time to the same class.

Characterizations of the VLL Environment

Logic of Operation and Productivity

The Suwannee Middle School VLL is held in a regular classroom. Students spend one period a day there working on a computer, and the rest of the day in a more traditional brick-and-mortar classroom setting. The room arrangement at the start of each class is somewhat traditional, where students’ desks are lined up and separated facing the teacher’s desk and a whiteboard. On the walls of the classroom, there are

attractive posters of goal setting activities and student pace charts for each class. The room is also equipped with two carts of laptops. Another important component is a small adjacent room which has a telephone available for student(s) to communicate with their online instructor when it's time to do things such as complete oral assessments, participate in welcome calls, or ask questions that they need answered. This room is visible to the classroom teacher through a window.

Enrollment for 2011-12 and 2012-13 has been steady at 45 students each year. All (100%) in 2011-12 successfully completed their coursework. Almost all of them made A's and B's. According to a school administrator, "There was only one or two C's out of all of these students that participated in the high school credit which says to me that it's successful and they are able to academically succeed in those courses."

Purpose

The purpose for offering this program was to ensure that it gave the students enough academic support and challenge. The FLVS VLL option was selected because of the wide variety of challenging courses that could be available for students/parents to select from—courses that could not otherwise be afforded. It was also attractive because VLL coursework could be substituted for an elective (non-academic) class, and not interfere with students' schedules. From the school administrators' perception, objectives of this VLL include:

- Providing a highly effective certified teacher to facilitate the lab and provide support
- Offering a range of online courses that are best suited for students
- Providing more tailored learning methods with student-centered options, such as selecting learning materials
- Providing opportunities for students to work at their own pace
- Providing opportunities to learn 21st century skills
- Meeting the needs of exceptional students who are considered gifted

Orientation and Registration Process

Each year gifted students and their parents/guardians are invited to attend an orientation meeting at the school, facilitated by both the school and FLVS, where they are provided with information about the lab, including lab requirements, how it operates, and the different options for coursework. They are walked through the different steps for how to make an account, and how to select one of the recommended courses. There is plenty of time for questions and discussion. If students sign up for a course—and almost all of them do—they begin coursework in the fall, when school starts.

Meetings are held for each child with their parents/guardians and the guidance counselor(s) to discuss the educational plan (EP) related to their individual needs and the services being provided.

The VLL experience replaces an elective period, where gifted students are grouped by their grade level regardless of the FLVS high-school course they are enrolled in. Participating students are enrolled in an elective course, *Advanced Academics: 6-8*. Of the 63 courses offered at the high-school level by FLVS, school administrators choose courses that complement and strengthen the school's overall existing program.

Thus far, students in the lab have enrolled in 11 different courses, sticking mainly to one area of interest or track.

- Science Track: Biology I and Forensic Science
- Foreign Language Track: Chinese I, Spanish I & II, Latin I
- Mathematics: Algebra I (for 7th grade), Geometry
- History Track: World History, U.S. History
- Other: Computing for College and Careers

Multiple Layers of Support

The students benefit from taking online courses, while not totally letting go of the brick-and-mortar environment they are more familiar with. They do this in a supportive environment that is highly individualized and differentiated. In order to help learners achieve their best work, all students receive support from a team comprised of the lab facilitator (gifted teacher), an online instructor, a round-the-clock IT representatives, and other school and FLVS support staff.

To make the lab possible, the school provides: a classroom with computer access and other technology required for the students to take courses at school; telephone access for the online instructor-student phone calls; and the classroom teacher (lab facilitator). The lab facilitator—who holds professional certifications for grades 6-12 and the Gifted Endorsement—monitors the students while they work on their FLVS coursework. Like all FLVS onsite lab facilitators, she has the responsibility to ensure that students stay on task, make progress in their course, and if possible, help students with their course or technology questions. She also coordinates with the online instructors, to gain information about how students are progressing, and to share pertinent information about the students and the school.

FLVS provides multiple layers of support, in addition to the courses and well-qualified, state-certified online instructors. Initially, FLVS provided training to the teacher, school guidance counselor, and administrators to help them get started with the lab successfully. There is also a streamlined registration process, designed specifically for VLLs, which helps ensure that students are successfully enrolled in the right course, etc. Another layer includes a blended learning specialist from FLVS, who is assigned to the lab and provides continuing support.

The lab facilitator works closely with online instructors who provide her with weekly reports that contain relevant information about each student's progress, e.g. grades on assignments, GPA, whether or not they are on track (coded red, green, yellow), and other circumstantial information. Online instructors generally do same-day grading and return student's phone calls within 30 minutes. Each online instructor reports to an instructional leader, who provides them with support much like a school principal. Online instructors and their instructional leader are also encouraged to make site visits and check up on the progress of students in the VLL.

Establishing Routines and Tracking Productivity

The lab facilitator has the responsibility to ensure that students are successful. Much of this is accomplished through progress monitoring, keeping students on task and coordinating with online instructors.

Evidence from our analysis of both the observations and conversations with different stakeholders, revealed that the lab facilitator has been successful in establishing a consistent and predictable routine for what occurs in the lab. When students first come into the class, they move their desks around for what is conducive to learning. Some work side-by-side, especially when they are working on the same course, while others work alone. Some sit far away from the others, tucked away along the perimeter. A few wear headsets. Transitions between classes are smooth, and the environment feels safe and relaxing. Students get started quickly, either logging on to their computer or checking their progress using the charts on the wall. They feel free to interact, both with the lab facilitator and with other students. This freedom helps with the development of their interpersonal skills and self-regulation. They act confident and content, and are more engaged than what an educator might expect for this particular demographic.

During an interview, the lab facilitator explained that the different pace charts posted on the wall are used to outline the FLVS course objectives and activities that the students are required to accomplish, and as a student completes a task, they mark it off. This serves to not only encourage and motivate the students to stay on task, but it also helps her effectively track their progress. Every Tuesday, she obtains and reviews reports from FLVS about each student's progress, which she compares to the pace charts, so she is aware if the student are missing grades or are falling behind.

Benefits of the VLL

The case study revealed that VLL programming—specifically online instruction that takes place in brick-and-mortar public schools—can be an effective means for helping gifted and talented middle school students reach their potential. Students' major reasons for enrollment in the VLL include a desire to be on an accelerated track, and the unavailability of the courses being offered at their home school.

Of the 45 middle school gifted students who enrolled in the first cohort, all were successful in completing at least one academic course at the high-school level. Follow up research is recommended to increase the understanding as to how the VLL experience will affect these gifted students in high school and beyond.

Other benefits of the VLL that were supported through this research include *extending course offerings to allow for accelerated learning, providing more personalized teaching and learning, supporting the development of 21st century skills, and bridging the gap between online and brick and mortar schooling.*

Students perceive that taking high school classes in middle school will allow them to take more college classes in high school. They also believe it is a benefit for taking the online course as part of the regular school day, rather than taking FLVS courses "at home," when they have other commitments. Another common reason is that they appreciate having some choice over what courses to take. Having so many advanced-level academic courses offered in just one room, provides students with beneficial choices that would otherwise be inaccessible because of higher costs associated with brick-and-mortar barriers for teacher-student ratios and class-size.

Personalized learning helps draw attention and motivate these students in each of their specific interests, through both the choice of their course, and a flexible pace. Having some control over their learning objectives and with the course content; the faster pace; working independently; being with gifted peers; and the challenge of obtaining advanced credit for high school are what they appreciated most about the

experience. While almost all value being able to get ahead, there were a few who feel the pace is too demanding. From the teacher/administrator perspective, flexibility for allowing as much time as students need, provided they do not get too far off pace, has a positive effect on participants' motivation and learning. And while a flexible schedule allows many students to accelerate and get ahead of schedule, some can still fall behind from time to time. Students and the teacher/administrators agreed that the pacing charts and having the lab facilitator collaborating with the online teachers is helpful for keeping many of the students on track.

Another benefit of the VLL was that it gives students a chance to get used to online courses, while not totally letting go of the brick-and-mortar environment they are more familiar with.

Findings revealed a large majority of students perceived their experience in the VLL helped them develop many 21st century learning and innovation skills. Interviews with the school, district and FLVS personnel supported these findings.

Students Perceptions for How the VLL Compares to More Traditional Classes

Students like that it is different than what they experienced the rest of the day. Some liked it because they preferred, *working independently*, while others enjoyed *being with their gifted peers*. The most common responses for how the VLL was different included that it was *more challenging*, mainly for two reasons: because there was either a) more self-regulated learning, or similarly b) more rigorous because they had to think deeper and answer their own questions. A few found it easier in the blended environment because they could *go at their own pace*. Many also reflected on how they had to be more active learners, and apply themselves in the VLL, being more autonomous or *self-directed* and taking charge of their own learning. Some of the students were struggling with the *longer length of the lessons*, or with what they believed were *vague instructions*.

Lessons Learned and Advice from the Lab Facilitator and School/District Administrators

The Suwannee school administrators and faculty members were asked what lessons they learned or what they would recommend to other schools starting virtual learning labs. Below is a summary of their suggestions.

- It was recommended that a comprehensive list of all technology needs be made available to the school and IT department before the start of the fall semester. This way, all software download permissions and browsing restrictions could be addressed before the start of the year. This would help to reduce student course disruptions and facilitate a smoother flow for the students.
- Having an incentive or buy-in from the parents may be necessary for the students' success in some of the more fast-paced courses. Parents need to be willing and able (computer access, internet connectivity) to assist their students in being able to work on the course outside of the school day.
- Additional enrichment activities, such as community projects and volunteer activities outside of the VLL coursework should be implemented.
- Developing an effective system for keeping up with the progress of students is beneficial.

- Providing lab facilitators with training and ongoing professional development and support; and opportunities to visit other VLL as a way to gain additional knowledge about other working labs is important.
- Students do not necessarily understand the benefit of taking advanced courses, or how it will affect their high school program of study. Providing more details and discussion about the different tracks at orientation is recommended.
- Last year, because of legislation that allowed 4th and 5th graders who scored above grade level on state standardized tests to take middle school courses, the demand for offering middle school students high school course options, is sure to grow.
- Not all gifted students have the same strengths so it is not safe to assume they are all at the same level. Providing multiple choices for content areas and suggested timelines provides opportunities for them to excel on different paths, with regard to their talent and/or interest.
- One policy modification, important to many stakeholders, was changing the way valedictorian and salutatorian was calculated in the district. Now, instead of counting all high school credits beginning in 6th grade, they begin after the students move to a high school campus.

CONCLUSION

Part of the answer for meeting the objectives for ensuring high expectations and achievement for learners is allowing students to have the freedom and flexibility that comes with these emerging environments. Results from this case study confirm that gifted students can learn in a blended setting, with a computer-based learning lab for part of the day and in traditional classrooms, for the rest. The programming provides a number of benefits, including a more student-centered approach that allows self-pacing within each course, so students can work at a pace consistent with their individual rate of learning and choose courses in their area of interest and talent. It also allows for an accelerated pace, with the opportunity to obtain high school credits while still in middle school. In addition, it is reasonable to implement, satisfies parents and students, and can be done under tight monetary constraints.

REFERENCES

- Cavanaugh, C., Gillan, K., Kromrey, J., Hess, M., & Blomeyer, R. (2004). *The effects of distance education on K-12 student outcomes: A meta-analysis*. Naperville, IL: Learning Point Associates.
- Creswell, J. W. (2007). *Qualitative inquiry and research design: Choosing among five approaches*. Thousand Oaks, CA: Sage Publications.
- Florida Department of Education. (2012). *Understanding FCAT 2.0 reports*. Retrieved from <http://fcats.fldoe.org/fcat2/pdf/s12uf2r.pdf>
- Hasler-Waters, L., & Leong, P. (2011). New roles for the teacher and learning coach in blended learning for K-12. *Proceedings of World Conference on Educational Multimedia, Hypermedia, and Telecommunications* (pp. 2716-2725). Chesapeake, VA: AACE.
- Means, B., Toyama, Y., Murphy, R., Bakia, M., & Jones, K. (2009). *Evaluation of evidence-based practices in online learning: A meta-analysis and review of online learning studies*: U. S. Department of Education, Washington, DC.
- Patrick, S., & Powell, A. (2009). *A summary of research on the effectiveness of K-12 online learning*. International Association for K-12 Online Learning (iNACOL). Retrieved from <http://www.inacol.org/research/>
- Picciano, A. G., Seaman, J., & Sloan, C. (2009). *K-12 online learning: A 2008 follow-up of the survey of U.S. school district administrators*. Needham, MA: The Sloan Consortium. Retrieved from http://www.sloanconsortium.org/publications/survey/pdf/k-12_online_learning_2008.pdf
- Rauh, J. (2011). Online education as a toll good: An examination of the South Carolina virtual school program. *Computers and Education*, 57(2), 1583-1594.
- Rice, K. (2006). A comprehensive look at distance education in the K-12 context. *Journal of Research in Technology in Education*, 38(4), 425-448.
- Stake, R. (1995). *The art of case study research*. Thousand Oaks, CA: Sage.
- Stake, R. (1998). Case studies. In N. K. Denzin & Y. S. Lincoln (Eds.), *Strategies of qualitative inquiry*. (p. 86-109). Thousand Oaks, CA: Sage.
- Stufflebeam, D. (2001). Evaluation models. *New Directions for Evaluation*, 2001(89). doi: 10.1002/ev.3
- Watson, J., Murin, A., Vashaw, L., Gemin, B., & Rapp, C. (2012). *Keeping pace with K-12 online & blended learning: An annual review of policy and practice*. Evergreen Education Group. <http://kpk12.com/reports/>