Implementation of the Collaborating on Economic Success in Appalachia (COESA) High School-Higher Education Alignment Project

Barry Oches, PhD, Ohio University
Aleksey Kolpakov, PhD, Ohio University
Marsha Lewis, PhD, Ohio University
Anirudh Ruhil, PhD, Ohio University
Brenda Haas, EdD, Shawnee State University
Chris Shaffer, MBA, Shawnee State University
Donald Washburn, EdD, Shawnee State University
John R. Roush, EdD, Southern State Community College

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The Ohio Education Research Center (OERC) is a **COLLABORATIVE** of Ohio-based researchers from six universities (Case Western Reserve University, Miami University, Ohio University, The Ohio State University, University of Cincinnati, and Wright State University) and four research institutions (Battelle, Battelle for Kids, Community Research Partners and Strategic Research Group) The founding partners coordinate the work of the OERC through the Governance Committee and three standing committees (Research Agenda, Data, and Outreach). Membership includes key participants from State of Ohio agencies and partner organizations. Administratively, the OERC reports to the State of Ohio through the Policy Council. The OERC is headquartered at The Ohio State University.

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Core **FUNDING** for the OERC is provided by the Ohio Department of Education. Additional funding comes from the Ohio Department of Job and Family Services in collaboration with the Ohio Board of Regents.
The Collaborating on Economic Success in Appalachia (COESA) partnership was one of fourteen high school-higher education alignment consortia funded by the Ohio Department of Education to address the curricular misalignment between high school and college that contributes to close to half of Ohio’s college freshman enrolling in remedial coursework during their freshman year of college. COESA completed a planning/gap analysis phase in 2012 and implemented Year 1 of alignment work during the 2012-13 academic year. This case study focuses on the perspectives of participating high school teachers and higher education faculty regarding high school-higher education alignment and measures the initial network development among the consortium participants.

The case study sample consists of four high schools that are representative of the 18 participating high schools, as well as the three higher education institutions in the collaborative. The case study deploys a single-case design with multiple, imbedded units of analysis. Semi-structured interviews with high school teachers, principals, higher education faculty, and college administrators were combined with a social network analysis designed to identify involvement of, and relationships among, high school teachers and higher education faculty in the consortium.

Findings from the Year 1 case study indicate:

• There is a lack of common baseline data across high schools and even across IHEs regarding college readiness, course-taking patterns, course completion and persistence. The COESA pilot is compiling a common set of baseline data that can be used to track progress over the three-year project period and beyond.
• There are still barriers present that prevent the full implementation of some of the suggested “fixes” for misalignment of high school and college curriculum. Dual enrollment and blended learning, for example, are difficult to implement on a larger scale due to infrastructure barriers and lack of consistent policies across institutions.
• High school teachers and college faculty are aware that a different set of rigor and behavior expectations is likely contributing to low college readiness of many students in the region.
• Social network analysis at the end of Year 1 of implementation indicates the development of relationships between high school teachers and college faculty, with faculty having more connections than high school teachers in the consortium.
• Several innovations were piloted during Year 1 of implementation, including subject-specific workshops bringing together high school teachers and IHE faculty, and a county-wide syllabus for a rigorous 12th grade mathematics course jointly developed by high school teachers and IHE faculty.

Keywords: College Readiness, Alignment, dual enrollment, remedial coursework
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**Project Team**
Barry Oches, PhD, Ohio University  
Aleksey Kolpakov, PhD, Ohio University  
Marsha Lewis, PhD, Ohio University  
Anirudh Ruhil, PhD, Ohio University  
Brenda Haas, EdD, Shawnee State University  
Chris Shaffer, MBA, Shawnee State University  
Donald Washburn, EdD, Shawnee State University  
John R. Roush, EdD, Southern State Community College

Questions regarding this report should be directed to Marsha Lewis at: lewism5@ohio.edu.
I. PROBLEM STATEMENT

Based on the most current U.S. Census data, an average of 12% of adults in the four-county Collaborating on Economic Success in Appalachia (COESA) region hold a Bachelor’s degree or higher, compared to approximately 24% of Ohioans and 28% of adults nationally (U.S. Census Bureau, 2012). While the education gap between Appalachian Ohio and the rest of the state and nation has begun to narrow, the region is still not producing, retaining, or attracting sufficient numbers of college graduates to grow the economy. While college going rates are increasing in the region, a 2011 study by the Ohio Board of Regents revealed that 42% of all Ohio freshmen who attend a public college or university in Ohio require remediation in mathematics or English (Ohio Board of Regents, 2011). Much of the literature documenting research on higher education access and success consistently highlights the fact that students who take remedial courses as freshmen are less likely to persist to graduation (National Conference of State Legislatures, 2013). It is critical for all of Ohio, and even more critical for the Appalachian region of Ohio to quickly identify and implement better strategies to: 1) attract/recruit more high school students to enroll in higher education, 2) improve the skills of high school students so that they do not require remediation when they get to college, and 3) support the students so that they persist in higher education to obtaining a degree.

The Ohio Department of Education has recognized the critical need for students to be college ready when they graduate from high school. In its successful 2010 federal Race to the Top application, one of the five areas of focus for comprehensive reform of Ohio’s education system was a college ready curriculum:

*By 2014, 100% of Ohio’s classrooms will implement a more rigorous college- and-career ready curriculum that, together with aligned assessments and teacher supports, will form the foundation of a comprehensive system to empower Ohio’s students to succeed globally in the 21st century (Ohio Department of Education, 2010).*

As part of the Race to the Top implementation strategy, the Ohio Department of Education and the Ohio Board of Regents developed a statewide high school-higher education alignment initiative which resulted in fourteen funded partnerships among high school, higher education, technical and supporting institutions in the state of Ohio. The goals of the alignment projects are to help ensure that (a) more students leave high school prepared to succeed in college and careers; (b) more students graduate from high school having earned postsecondary credit; (c) more adult learners transition successfully from ABLE/GED programs to postsecondary education; and (d) the need for remedial education courses at colleges and universities is reduced (Complete College Ohio Task Force, 2011).

As one of the fourteen funded high school-higher education alignment partnerships, the Collaborating on Economic Success in Appalachia (COESA) was formed. COESA includes eighteen school districts in Highland, Lawrence, Scioto, and Pike counties (see Appendix A for participating school districts) and three higher education institutions (Ohio University-Southern Campus, Shawnee State University, and Southern State Community College). These three institutions are among the primary destinations for students in the COESA consortium high schools. The consortium also consists of five supporting partner organizations; Lawrence County Educational Service Center, Ohio Appalachian Center for Higher Education (OACHE), South Central Ohio Computer Association-ITC (SCOCA), South Central Ohio Educational Service Center, and Southeast Ohio Virtual STEMM Platform.
The COESA completed a planning process/gap analysis in the 2011-12 academic year, identifying the following needs address the ongoing disparities in the region:

Need 1- Increased academic engagement  
Need 2- Improved skills in math, reading, and science  
Need 3- Increased social competencies and empowerment assets  
Need 4- Decreased non-academic barriers impacting school success  
Need 5- Increased college completion rates

Based on the preceding five areas of need identified by the collaborative, a plan of action was developed that narrowed the focus to three broad goals to be addressed during the three-year alignment project:

Goal 1- Align high school course expectations with higher education placement expectations in first-year, non-remedial coursework to ensure seamless articulation and transfer.  
Goal 2- Align teacher preparation programs to match Ohio’s Common Core State Standards.  
Goal 3- Provide service to the Appalachian region through college access and success strategies.

The COESA made a strategic decision to focus on the “Middle 60%” of high school students in the region. These students are not in the top 20% of their class and are less likely to be enrolled in Advanced Placement or dual enrollment courses, but because of the increased awareness of the need for some postsecondary credentials, are more likely than ever before to enroll in college. The issue for this Middle 60% is college readiness, especially if the coursework they had in high school was not aligned with freshman college coursework expectations and because they have fewer college readiness skills than the top 20% of students who are almost always college bound. In Appalachian Ohio, the Middle 60% face an additional hurdle: Because they are more likely to be first-generation college students as well a comprehensive initiative that facilitates preparedness for college coursework and college expectations is critically important if these students are to persist beyond their first term or first year of postsecondary study.
Curricular misalignment of K-12 and higher education systems has been a longstanding issue in the United States. Many scholars in the field of education administration and policy point at the inadequate transition of high school students to higher education institutions (Conley, 2003a; Conley 2003b; Kirst & Bracco, 2004; Kirst & Venezia, 2004; Smith & Wertlieb, 2005; Venezia, Kirst, & Antonio, 2003). The current misalignment of K-12 and higher education systems coupled with the costs of these two- and four-year degrees, and the implications of a dwindling pool of skilled graduates entering the regional workforce have become crucial for economic development and social justice in many U.S. states. For example, it is widely documented that in some at-risk student populations (first-generation students, for instance), a larger proportion end up taking remedial English and Mathematics courses in college.

The inadequate transition of high school students to higher education institutions can be influenced by various factors. First, there is a lack of formal communications between high schools and higher education institutions (Conklin, 2005) to ensure better transition of high students between secondary and postsecondary systems of education. Second, high schools and higher education establishments are not aligned in terms of accountability, information, and data systems (Kirst & Bracco, 2004; Venezia, Kirst, & Antonio, 2003). Third, student expectations are not always consistent with what is expected of the students at the college level (Karp, Holmstrom & Gray, 1998; Smith & Wertlieb, 2005). Finally, there has been a concern that high school students are not socially prepared to tackle the challenges posed by independent life being away from the parents (Holmstrom, Karp, & Gray, 2002; Tan, 1996).

The existing divide between secondary and postsecondary systems of education has been furthered by divergent paths of development and fragmented structures for governing and managing. Moreover, high school teachers and university and college faculty do not share the same professional associations where they could exchange expectations about smooth transitioning between different levels of education. The misalignment is further exacerbated by the existence of different curriculum standards (National Center for Public Policy and Higher Education, 2009).
III. METHODOLOGY

Given the organizational structure of the COESA, a single case study design with multiple embedded units of analysis was utilized for this study (Yin, 1994). The COESA represents a unique case across the 14 funded high school-higher education alignment consortia across Ohio, albeit comprised of 18 individual subunits of implementation (the 18 participating high schools). First, it can be likened to a single experiment under unique conditions (for e.g., the historically low college going and educational attainment rates in Appalachian Ohio as compared to the rest of the state). Second, it meets all of the conditions necessary for examining the success of the high school-higher education alignment project.

The use of an embedded single-case design with 18 subunits (individual high schools) provides a more complex and extensive analysis of implementation and initial outcomes of this unique collaborative between high schools and higher education institutions. First, some of the data -- such as available statistics for dual enrolment -- were analyzed at the subunit level (all 18 school districts covered by the COESA). Second, four districts were selected as exemplar districts for more in-depth analysis that enabled a richer, more vivid description of implementation of the project components and initial outcomes (e.g. student selection of rigorous coursework, dual enrollment, blended learning, college enrollment). These four districts were selected to represent the diversity of districts in the consortium (e.g. district size, district type, county, prior college remediation rates).

A detailed description of the first implementation year of a multi-year project to build the collaborative was obtained by the means of one hour semi-structured interviews with high school teachers and administrators at the four intensive case study districts, as well as higher education faculty members and administrators at the three participating institutes of higher education. Table 1 shows the location of the interviews and the number of each role to be interviewed.

Table 1: Interviews Conducted between February and April, 2013

<table>
<thead>
<tr>
<th>Role</th>
<th># of Individuals</th>
<th>Participating Institutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>High School</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Teachers</td>
<td>15</td>
<td>South Point Local School District</td>
</tr>
<tr>
<td>• Principal</td>
<td>1</td>
<td>Bloom Vernon Local School District</td>
</tr>
<tr>
<td>• Guidance Counselor</td>
<td>1</td>
<td>Sciotoville Community School</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pike County Career Technical Center</td>
</tr>
<tr>
<td>Higher Education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Content Area Faculty</td>
<td>9</td>
<td>Shawnee State University</td>
</tr>
<tr>
<td>• Administrators</td>
<td>3</td>
<td>Ohio University-Southern Campus</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Southern State Community College</td>
</tr>
<tr>
<td>Total Interviews</td>
<td>29</td>
<td>Total of seven participating institutions</td>
</tr>
</tbody>
</table>

The interview questions focused on the current state of alignment between high school curriculum and postsecondary education, need for alignment of high school and higher education curriculum in the region, activities, resources or certain people making the current alignment effort successful, and challenges of aligning high school and higher education curriculum (See Appendix B for interview questions).
Given that this is an exploratory case study and researchers did not seek to validate any particular theory the interview data were analyzed using a grounded theory approach (Strauss & Corbin, 1982). During the process of primary and axial coding, 533 initial codes were developed based on the verbatim transcripts of the 29 interviews. Using NVivo qualitative analysis software, these initial codes were subsequently mapped to help explain themes that emerged from the data during the stage of theoretical coding. Generally speaking there was good consistency among all those interviewed concerning the topics discussed.

In addition to the interview analysis and in order to better understand the current system of formal and informal communication among faculty and administrators in the partnering school districts and higher education institutions participating in the COESA project, researchers also relied upon social network analysis. Data were collected via a web based survey designed to (a) identify faculty and high school teachers involvement with the Collaborating on Economic Success in Appalachia’s (COESA) project and, (b) investigate communication relationships between high school teachers/administrators and higher education faculty/administrators. Survey respondents disclosed their name, organization, job title, the length of in their particular position, and basic demographic information. In order to identify communication patterns between high school teachers/administrators and higher education faculty/administrators, respondents were asked to identify up to ten teachers/administrators and ten higher education faculty/administrators they work on high school-higher education alignment, and then asked to rate their relationship on multiple factors. Researchers contacted 222 representatives of high schools covered by the COESA as well as faculty of three higher education institutions directly involved in the project. Only 34 respondents completed the social network analysis survey thus yielding 15.3 % response rate (See Appendix B for social network survey).

The resulting social network data were then coded and synthesized through the use of software programs UCINET 6™, NetDraw and Pajek to understand prevalent formal and informal interactions among the representatives of school districts and higher education institutions participating in the COESA project. NetDraw was used to visualize the information exchange and map the advice relations among high school teachers and faculty. Conventional measures of ego-centric networks such as size and homophily were calculated in UCINET 6™ to assess the structure of interactions between participants and no-participants of the COESA project. In this study, ego-centric networks represent collections of personal networks centered around each respondent called “ego” that include both teachers and high school faculty. Size of ego-centric networks allows detecting the total numbers of relations with other high school teachers and higher education faculty. A measure of homophily shows a preference for (or inclination towards) forming relationships with others within a respondent’s occupational group. In other words, homophily measures here would tell us if high school teachers prefer talking to other high school teachers rather than to university or college faculty.

The issue of reliability for this case study project was addressed by using different data collection methods such as semi-structured interviews and surveys and triangulating results. For example, responses about interactions between high school teachers and faculty obtained via interviews were supported by data from the social network survey.
IV. TEACHER EMPLOYMENT IN OHIO’S SCHOOLS

Findings from Year 1 of Implementation

COESA Activities during Year 1
During Year 1 of implementation the COESA pilot focused on the goal of high school- higher education course alignment. Activities and projects implemented in Year 1 included:

- A series of workshops were held in the fall of 2012 bringing together high school teachers and higher education faculty to work collaboratively on curricular alignment, course rigor, and expectations. Workshops in math, science, and English were delivered and well attended by high school teachers from the 18 COESA high schools.
- After the workshops, regular (monthly or quarterly) webinars were hosted by IHE faculty in math, science, and English. These webinars were developed to continue collaboration with high school teachers and answer questions teachers had as they made curricular modifications.
- The planning/gap analysis phase of the project had revealed the lack of consistent data across the three IHEs that would allow baseline data to be compiled (e.g. average ACT scores disaggregated by various factors, course-taking patterns and course completion by high school). COESA project personnel utilized the Tableau software package to aggregate and analyze similar data for all 18 participating school districts. Project personnel made site visits to all 18 high schools to discuss data on enrollment patterns, freshman success, remedial coursework, and course completion specific to that high school’s students who had gone on to the same IHE. The Tableau software allowed for real-time manipulation of the data to answer specific questions from high school principals, guidance counselors and teachers and helped show the need for better collaboration between high schools and colleges in the region.
- The gap analysis identified the need for a consistent, rigorous 12th grade mathematics course that would better prepare students for non-remedial college math. COESA facilitated a workshop that brought together all high schools in one of the COESA counties to work with mathematics faculty and develop a county-wide 12th grade math course syllabus.
- The Minnesota College Writing high school vertical alignment web portal was made available to high schools in the COESA region and several English teachers implemented the curriculum during Year 1.

Status of Alignment during Year 1
The interviews conducted with high school teachers, high school principals, college faculty, and college administrators provide information about the status of alignment of these institutions to support students in the region as they prepare for and enter college. This first year of implementation data can be described as baseline data for the collaborative to use to gauge its development across the multi-year project. Findings are disaggregated by the identified areas of need that emerged from the planning/gap analysis process conducted by the partners in the year prior to implementation.

Increased Academic Engagement
- The high school teachers interviewed generally felt positive about the new Common Core state standards, indicating that there was increased rigor in many areas they felt were sorely needed.
The high school teachers interviewed wondered if they, as caring high school teachers, overseeing every assignment, every grade, and every activity done by students, help them acquire knowledge and skills or if this enveloping style of instruction makes the students dependent on the teachers to the extent that the students are unable to independently succeed when they get to college because they lack motivation and self-discipline.

The method of content delivery called “Blended Learning” was one focus of this project. This approach uses a variety of methods to deliver content, including face-to-face teacher-student interaction as well as web-based content delivery. In another similar method, referred to as flipping the classroom, students watch a video of the lecture (or some other presentation of the content) on their own time and come to class prepared to apply and practice related skills under the supervision of the teacher. This approach has promise for transitioning high school students to higher education by making the student more responsible for his/her own learning while still being in the nurturing environment of the high school classroom. During Year 1 of the COESA project, teachers were introduced to a 11 high school online courses (e.g. Everyday Chemistry, AP Calculus, AP Biology, Physics) and two professional development courses developed and delivered by the SCOCA Blackboard Consortium. Utilization of these online courses by COESA teachers was relatively low during the initial year of the project. Challenges with technology and bandwidth still plague the Appalachian region. One teacher in the COESA consortium piloted the flipped classroom model in Year 1.

**Improved Skills in Math, Reading, and Science**

- College science faculty interviewed were aware that they have more and better laboratory equipment than the high schools and are willing to try to figure out how it can be shared efficiently in order to support better science instruction at the high school level.
- There are policy barriers that limit the options for dual enrollment courses offered in the region. Many high school teachers are interested in teaching dual enrollment classes at their high schools. A major barrier is that most high school teachers have an undergraduate but not a graduate-level degree in the content area. Often their graduate degrees are in administration or counseling, as these are degree programs most often marketed to and developed around the schedules of in-service K-12 teachers. Under current dual enrollment policy in Ohio, it is a function of the IHE to credential an individual to teach at the college level and IHEs will not qualify a person without a graduate degree in content areas like math or biology or English. One IHE in the COESA will work around the requirement of a graduate degree in the content area if the high school teacher collaborates with a college faculty member to design and deliver the curriculum. Disparities in dual enrollment policy and practice remain a challenge.
- Both high school teachers and college faculty discussed differing expectations of student behaviors and academic rigor between high school and college. Attendance is required in high school but not often required in college, and there are no immediate sanctions for not attending class. The amount of reading and work outside of class at the college level exceeds that expected in many high school classes.

"The number one (challenge)... is attendance. Actually coming to class. In the developmental courses I use a course management software where I can see their time on topic. And it is depressing."
“I think we’re doing our students, in high school and in general, a disservice of not expecting them to do anything outside of class... it sends them the message that everything else is more important than schoolwork.”

• Writing is a skill that concerns both teachers and faculty members alike. Nearly all interviewees expressed the difficulty they have in getting their students to write well. College faculty expressed that they often needed to correct the misconceptions of their incoming students about writing. They commented that some students have a formulaic approach to writing – that an essay contains a specific number of paragraphs and that a paragraph contains a specific number of sentences. They feel the students need to unlearn these “rules” before they can begin to submit acceptable writing samples.

“These two went to the same high school together, were taught that every single paper they ever wrote, had to have five paragraphs, and every single paragraph had to have 11 sentences.”

• Course rigor was mainly discussed by the interviewees from IHE faculty. They contended that were they to teach a dual enrollment class of high school students, it would be more difficult to maintain the reading load, the laboratory procedures, the writing assignments and their own (i.e., the IHE faculty’s) expectations in a high school setting than if they were teaching the course on campus.

Increased Social Competencies and Empowerment Assets
Teachers and faculty members are aware that most high school students, particularly first-generation college students, feel out of place on a college campus and are intimidated by the level of expectations they feel college life demands. All interviewees acknowledged a need for communication in order to solve some of the problems and barriers between high school and higher education. Other than communication, two methods to align expectations were mentioned most often: 1) have higher education faculty members go to area schools and talk with the teachers and students, and 2) have more opportunities for high school students – accompanied by their teachers – to come to campus to see first-hand what college classes are really like.

Decreased Non-Academic Barriers Impacting School Success
• Nearly all high school teachers interviewed said inadequate technology is a barrier to blended learning and web-based research or curricular enhancements. The most frequently mentioned barrier was the lack of reliable Internet service in high schools. Their own frustration levels have been tested when trying to use the Internet in the classroom and it is slow or the school’s screening software blocks the site they want to access. Even though many students have Internet access at home, not all do, so it is difficult to design web-based assignments because this will exclude some of the students by virtue of fewer family resources.

• A common barrier to more high school/college interaction is money. School districts are often operating with few extra resources to use for incentives for teachers to commit summer hours collaborating with college faculty on alignment issues. If teachers want to visit a college campus or take students on extra college visits, substitute teachers are required and transportation costs have to be incurred. There are multiple, competing priorities for K-12 resources.
Increased College Completion Rates
Dual enrollment was identified by COESA as one underutilized, but potentially powerful practice to increase the college going and completion rates for more students in the region. One way to provide students a head start on college completion is to enable them to earn credits toward college coursework while in high school. Ohio has a dual enrollment option for students to receive college credit for some of the high school coursework. Dual enrollment accomplishes two goals; 1) students get a head-start of credits towards a college degree, and 2) students become acclimated to the expectations of higher education prior to becoming a full-time student. In most instances, a dual enrollment course is taught at the high school by either a college faculty member or by a credentialed high school teacher. One major barrier identified by the COESA project is differing IHE policies on dual enrollment. The three IHEs in the COESA partnership all have different policies regarding credentialing high school teachers to teach courses where both high school and college credit will be granted and the role of the college faculty member. For example, two of the IHEs in the consortium will only credential a high school teacher to teach a dual enrollment class if he or she has a master’s degree in the particular content area, while the other IHE only requires a master’s degree and close collaboration with a college faculty member on syllabus design and rigor. The lack of a statewide policy makes alignment difficult, even across the relatively small COESA region. Table 2 below shows the extent of dual enrollment offerings and participation among the three institutions of higher education in this case study.

Table 2: Dual Enrollment Offerings by IHEs in COESA Region 2011-2012

<table>
<thead>
<tr>
<th>Higher Ed Institution</th>
<th>Number of High School Students Served</th>
<th>Number of High Schools Served</th>
<th>Counties Served</th>
<th>Subject and Number of Dual Enrollment Classes</th>
</tr>
</thead>
<tbody>
<tr>
<td>OU-Southern</td>
<td>145</td>
<td>4</td>
<td>2</td>
<td>English – (1)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Math – (3)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Science – (3)</td>
</tr>
<tr>
<td>Shawnee State University</td>
<td>157</td>
<td>2</td>
<td>2</td>
<td>Math – (4)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Science – (4)</td>
</tr>
<tr>
<td>Southern State Community College</td>
<td>1,152</td>
<td>21</td>
<td>9</td>
<td>English – (3)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Math – (6)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Science – (7)</td>
</tr>
</tbody>
</table>

(D. Washburn, Personal Communication, June 2013)

Informal and Formal Communication between High School Teachers and Faculty
One goal of the COESA partnership is to develop collegial familiarity and working relationships between high school teachers and college faculty in the region. The three IHEs in the partnership recruit a relatively large percentage of their students from high schools in close proximity to their campuses. The partnership, through face-to-face workshops, quarterly webinars, and other means of collaboration, is working to develop connections between high school teachers and college faculty that will facilitate curricular alignment, similar expectations, and ongoing collaboration.

During the first year of implementation it became evident to the project directors that the IHEs would need to take the lead on the alignment activities. Teachers and administrators in K-12 settings are charged with implementing a myriad of school reform initiatives and do not have the flexible scheduling that higher education faculty members and administrators have. Another lesson learned was that more face-to-face collaboration and network building must occur before teachers will engage in online collaboration in large numbers. While the initial in-person curriculum alignment workshops sponsored by COESA in reading, math, and science were well attended and
highly regarded by high school teachers, the subsequent quarterly webinars that connected high school teachers to higher ed faculty by discipline were not highly utilized in Year 1 of the project.

As discussed earlier, social network analysis was used to gauge the nature of collaborative activity in COESA’s developing phase. The visual presentation of information exchange and advice networks in COESA partnership suggests the central role of university faculty in forming collaborative relations. Figure 1 and Figure 2 clearly show the dominant position of universities in establishing connections for collaboration with high schools within COESA partnership. One can also see the peripheral or even isolated position of high school teachers with some of them forming cliques not connected to the rest of COESA participants. For example, Figure 1 features 4 cliques of high school teachers and one clique including high school teachers and one university faculty (nodes 12, 116, 5 and 64) which standalone from the rest of the information network.

Conventional measures of ego-centric networks between high school teachers and higher education faculty show that the collaborative relations in the COESA project are in a formative stage. However, one can clearly see more active involvement of faculty in establishing relations with high school teachers for the purpose of K-12-Higher Education alignment. For example, for high school teachers, the average size of information exchange egocentric networks is 2.6, indicating that on average, high school teachers exchange information with between two and three university or college faculty members concerning high school higher education alignment. On the other hand, on average university\college faculty exchange information with approximately 11 high schools. Similar results were found while analyzing advisory relationships between high school teachers and university faculty. On average, high school teachers turn to two university faculty members for advice, whereas university faculty tend to seek advice from approximately 10 high school teachers.

When it comes to communication preferences, high school teachers prefer exchanging information with other high school teachers rather than university faculty members. For instance, the homophily index -- here measuring the inclination of high school teachers (higher education faculty) to network more with other high school teachers (higher education faculty) than with higher education faculty (high school teachers) – averages to about 0.5 for university faculty and 0.8 for high school teachers, indicating that high school teachers have a higher likelihood of staying within their own environments for information exchange. However, when it comes to seeking advice regarding high school – higher education alignment both high school teachers and higher education faculty prefer seeking advice from their respective colleagues rather than reaching out to the other group (the homophily index is 0.6 for both groups).
V. CONCLUSIONS AND IMPLICATIONS

The first year of implementation of the Collaborating on Economic Success in Appalachia allowed the partners to identify possible barriers to the alignment between high school curriculum, college readiness, and the student performance expectations of higher education institutions, and also to pilot some innovations. Specific issues identified that are now being addressed include more contact with “college” while in high school for students in the region. This may include multiple trips to college campuses, use of campus lab space by high school teachers, and more dual enrollment opportunities where high school students interact with college faculty. Another issue involves the very real barrier of technology access by individual students as well as inadequate technology infrastructure and support in high schools. A third barrier identified is the lack of consistent policies on credentialing of dual credit instructors across institutions that hamper wider access to this valuable innovation.

While the collaborative is an emerging one, several innovations were piloted in Year 1. Subject-based workshops in math, science, and English were offered that brought together college faculty and high school teachers for productive work on syllabus alignment, rigor, and expectation. One county in the collaborative brought together all high school math teachers, together with college mathematics faculty, to develop a single syllabus for a rigorous senior math course that is intended to better prepare students for college math. Resources were available through the project to establish some common baseline data on course-taking patterns, freshman success, and persistence. These data can be used to help track the impact of the collaborative’s work over the long term as well as to identify needs and priority areas to be addressed. Social network analysis indicated the beginning of some cross-institution network development. In terms of how collaborative relationships are developing amongst COESA’s high school – higher education partners social network analysis revealed that higher education faculty appear to take a more active role in establishing a formal relationship with high school teachers. High school teachers, on the other hand, prefer exchanging information and asking advice of other high school teachers in regards to high school-higher education issues. COESA is still in its early stages. With maturation will, most likely, come changes in these patterns of network formation and network activity of high school – higher education faculty.

The benefits of taking the lead for the three IHEs in the partnership are that they can have a real impact on a large percentage of their freshman class by working with high schools in just a few counties. The work has the potential to make a significant impact. For example, Shawnee State University receives approximately 50 percent of its freshman class from 19 high schools in Southern Ohio. By building ongoing working relationships between high school teachers/administrators and college faculty, the partners can better ensure a ready freshman population that is less likely to need remedial coursework and more likely to persist and graduate.
VI. REFERENCES


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VIII. APPENDIX B: INTERVIEW SCRIPTS AND THE COESA SOCIAL NETWORK ANALYSIS TOOL

High School Teacher Interview Script

**Purpose and overview**
Hello, thank you for agreeing to be interviewed today. My name is ________ and I work for Ohio University’s Voinovich School.

As a member of the Ohio Education Research Center (OERC), the Voinovich School is doing a case study on the implementation of the *Collaborating on Economic Success in Appalachia* (COESA) High School-Higher Education Alignment Project. It is hoped that this case study will serve as a resource for other groups who are interested in aligning high school and higher education curriculums. Your name was given to us as someone who could share your experience and perspective on HS/IHE alignment. We would like to ask you some questions now and then chat with you again in April or May.

**Consent**
Please note that your **individual responses will be kept strictly confidential**. All information provided by individuals will not be seen by anyone other than the project team at the Voinovich School. This individual confidentiality will also be maintained in all reports that synthesize the interview data. Because this is a case study, in addition to the formal reporting, we will share with COESA any feedback that may help them increase the effectiveness and success of their efforts. In this feedback process we will still maintain individual confidentiality.

You may choose not to answer any of the questions or stop participating in the interview at any time. We thank you for your cooperation with this very important case study!

**Recording the discussion**
I will be recording our discussion today so that I do not miss anything that is said. I want to be sure to hear all of your comments and the recording helps me to do that. No identifying information will be used in our reports. This recording will not be shared with anyone outside of our project staff. After we end the project (in approximately December 2013) we will delete the recordings.

_Do you have any objections to me recording our conversation?_

Barry Oches
740-593-9799
oches@ohio.edu

Aleksey Kolpakov
740-597-2579
kolpakov@ohio.edu
**Opening question:**
- What subject and grade level do you teach? How long have you been teaching?

**Introductory question (help connect to topic)**
- Our study includes dual enrollment and blended learning for those students who are considered in “the 60%”. Not the top students and not the bottom. What is that you do that will enable these students to be successful in college?

**Key questions:**
- For the subject you teach, how would you describe the current state of alignment between high school curriculum and postsecondary education?
- Using a scale of one to ten how much of a need is there in this region of the state for alignment of high school and higher education curriculum *(with 1 being no need at all and 10 being a very great need)*? Please explain your answer.
- Will alignment help students from this region be successful in college?
- Do colleges make their academic expectations clear to high school teachers? Explain.
  a. What is your opinion on “dual enrollment” and “blended learning”? Do all students benefit equally?
- How much control do you feel you have on preparing your students to attend and be successful at postsecondary education including college. Do you need assistance? What would be helpful? Who do you think can help you? What resources do you need?
- Are there activities, resources or certain people who you think would make the current alignment effort successful? Please explain, be specific.
  - *If there are activities making current alignment efforts successful, please all of them.*
  - *Are you personally engaged in some these activities? If yes, please list other people you interact with during these activities. (Please get list of people for each activity mentioned in the previous probing question)*
- What else do you think is needed for improving alignment of high school and higher education curriculum?
- What challenges, if any, will there be to an effort to align high school and higher education curriculum in this region?
- Describe the ideal process or scenario for transitioning high school students to post-secondary education.
• Is there anything that I haven't asked you about the alignment of high school and higher education curriculum that you would like to add?

• If there was only one idea that I could take away from this interview what would you want it to be. What is the one take away you would want me to have?
IHE Faculty Interview Script

Purpose and overview
Hello, thank you for agreeing to be interviewed today. My name is ________ and I work for Ohio University’s Voinovich School.

As a member of the Ohio Education Research Center (OERC), the Voinovich School is doing a case study on the implementation of the Collaborating on Economic Success in Appalachia (COESA) High School-Higher Education Alignment Project. It is hoped that this case study will serve as a resource for other groups who are interested in aligning high school and higher education curriculums. Your name was given to us as someone who could share your experience and perspective on HS/IHE alignment. We would like to ask you some questions now and then chat with you again in April or May.

Will you, as far as you know now, be able and willing to speak with us again in April or May?

Consent
Please note that your individual responses will be kept strictly confidential. All information provided by individuals will not be seen by anyone other than the project team at the Voinovich School. This individual confidentiality will also be maintained in all reports that synthesize the interview data. Because this is a case study, in addition to the formal reporting, we will share with COESA any feedback that may help them increase the effectiveness and success of their efforts. In this feedback process we will still maintain individual confidentiality.

You may choose not to answer any of the questions or stop participating in the interview at any time. We thank you for your cooperation with this very important case study!

Recording the discussion
I will be recording our discussion today so that I do not miss anything that is said. I want to be sure to hear all of your comments and the recording helps me to do that. No identifying information will be used in our reports. This recording will not be shared with anyone outside of our project staff. After we end the project (in approximately December 2014) we will delete the recordings.

Do you have any objections to me recording our conversation?

Barry Oches Aleksey Kolpakov 740-593-9799 740-597-2579 oches@ohio.edu kolpakov@ohio.edu
Opening question:
• What courses do you teach and at what levels? How long have you been teaching?

Introductory question (help connect to topic)
• What attributes make students successful in your courses?

Key questions:
• For the courses you teach, how would you describe the current state of alignment of the high school curriculum with what you expect students to be able to do?

• Using a scale of one to ten how much of a need is there in this region of the state for alignment of high school and higher education curriculum (with 1 being no need at all and 10 being a very great need)? Please explain your answer.

• Do you believe alignment of high school and higher education curriculum would increase college or other post-secondary success of students from this region of the state? Why or why not?

• Do high schools generally understand the academic expectations of postsecondary institutions? Please Explain?

• How much control do you feel you have on students' preparation at the high school level to be successful at postsecondary courses like yours? What would be helpful?

• What is your opinion on “dual enrollment” and “blended learning”? Do all students benefit equally?

• Are there activities, resources or certain people who you think would make the current alignment effort successful? Please explain, be specific.

• What challenges, if any, will there be to an effort to align high school and higher education curriculum in this region?

• Describe the ideal process or scenario for transitioning high school students to post-secondary education.

• Is there anything that I haven't asked you about the alignment of high school and higher education curriculum that you would like to add?

• If there was only one idea that I could take away from this interview what would you want it to be. What is the one take away you would want me to have?
IHE Administrator Script

**Purpose and overview**
Hello, thank you for agreeing to be interviewed today. My name is ________ and I work for Ohio University’s Voinovich School.

As a member of the Ohio Education Research Center (OERC), the Voinovich School is doing a case study on the implementation of the *Collaborating on Economic Success in Appalachia* (COESA) High School-Higher Education Alignment Project. It is hoped that this case study will serve as a resource for other groups who are interested in aligning high school and higher education curriculums. Your name was given to us as someone who could share your experience and perspective on HS/IHE alignment. We would like to ask you some questions now and then chat with you again in April or May.

**Consent**
Please note that your individual responses will be kept strictly confidential. All information provided by individuals will not be seen by anyone other than the project team at the Voinovich School. This individual confidentiality will also be maintained in all reports that synthesize the interview data. Because this is a case study, in addition to the formal reporting, we will share with COESA any feedback that may help them increase the effectiveness and success of their efforts. In this feedback process we will still maintain individual confidentiality.

You may choose not to answer any of the questions or stop participating in the interview at any time. We thank you for your cooperation with this very important case study!

**Recording the discussion**
I will be recording our discussion today so that I do not miss anything that is said. I want to be sure to hear all of your comments and the recording helps me to do that. No identifying information will be used in our reports. This recording will not be shared with anyone outside of our project staff. After we end the project (in approximately December 2013) we will delete the recordings.

*Do you have any objections to me recording our conversation?*

Barry Oches
740-593-9799
oches@ohio.edu

Aleksey Kolpakov
740-597-2579
kolpakov@ohio.edu
Opening Question:

In general, do you believe that first-year students are prepared for the course work of their first classes at your institution?

Main Questions:

• From your perspective as an administrator, is there an “expectations gap” between high schools and institutions of higher education?

• Has your institution formed alignment related relationships with any regional K-12 school districts or high schools? If so, with which ones?

• What might be the challenges in aligning high school curriculum with post-secondary expectations, if any?

• What strategies could be successful for your institution to use to engage with high school staff and students in this process?

• Do you believe that there is a trade-off between increasing access to college and maintaining (or increasing) performance standards? Why?

• Do high school teachers and administrators generally understand the academic expectations of postsecondary institutions? Please explain.

• Do you believe that there are barriers which inhibit high schools from establishing relationship with institutions of higher education, like those you have with high schools? Please describe.

• What are the motivations for high schools and higher ed institutions to collaborate in this process?

• What are your opinions on dual enrollment?

• If there was only one idea that I could take away from this interview what would you want it to be. What is the one take away you would want me to have?
**COESA Social Network Analysis Tool**

Name:_______________________________________________________________________________

Department/School District_______________________________________________________________

Current Job Title: _________________________________________________________________________

1. How long have you been teacher or faculty?  ________ years

2. Please list up to ten several high school teachers and administrator you contact when it comes to the alignment of high school and higher education curriculum. You don’t have to list all 10 people. Note: Just list the people you contact, if any, regarding the alignment of high school and higher education curriculum.

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3. Please list up to ten university/college faculty you contact when it comes to the alignment of high school and higher education curriculum.

*Note: Just list the people you contact, if any, regarding the alignment of high school and higher education curriculum*

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Then, respond to the statements listed below on the next page using the list of names generated in the Step 2 and 3 (Note: the rating scale for Number 4-5 is different from Numbers 6-7, which have the same rating scale).

*(In the web-based survey, these items will appear in a grid next to the response categories, for the ease of participants who will be completing the survey)*

4: I consider this **person to be my friend**:

1=strongly disagree 2= disagree 3= neither agree/nor disagree 4=agree 5=strongly agree

5: I have **known this person** for:

1=Less than one year 2=1-2 years 3=2-3 years 4=3-5 years 5=More than 5 years

6: In the past school year how frequently have you **talked** to this person regarding the alignment of high school and higher education curriculum?
7: In the past school year how frequently have you asked this person for **advice** regarding the alignment of high school and higher education curriculum? I

0 = never   1 = yearly   2 = quarterly   3 = monthly   4 = weekly   5 = daily
Now please answer the following demographic questions:

8) What is your gender?  _____ Male  _____ Female
9) **What is your race/ethnicity? (Select one)**

___ American Indian or Alaska Native
___ Asian
___ Black or African American
___ Hispanic/Latino
___ Native Hawaiian or Pacific Islander
___ White

10) **What is your age? __________**

11) **What is the highest level of education you completed?**

_____ Four-year college degree / B.A. / B.S.
_____ Some graduate work
_____ Completed Masters or professional degree
_____ Advanced Graduate work or Ph.D
Figure 1. Information exchange network of COESA project

Note: Blue circles – higher education faculty; Red circles – high school teachers; size of a node suggests a number of connections
Figure 2. Advice network of COESA project

Note: Blue circles – higher education faculty; Red circles – high school teachers; size of a node suggests the number of connections