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Online Student Perceptions of the Need for a Proximate Community of Engagement at an Independent Study Program

DARIN R. OVIATT
Brigham Young University, United States
darin.oviatt@byu.edu

CHARLES R. GRAHAM
Brigham Young University, United States
charles.graham@byu.edu

JERED BORUP
George Mason University, United States
jeredborup@gmail.com

RANDALL S. DAVIES
Brigham Young University, United States
randy.davies@byu.edu

Research suggests that collaborative learning designs, which require interaction with teachers and peers, can promote engagement and learning for online courses. Many K-12 students seek supplemental online courses to meet graduation requirements and desire flexibility, which often conflicts with required interactions. This paper asserts that online independent study learners may create a proximate community of engagement (PCE) to provide the benefits of collaboration and interactions. Using the adolescent community of engagement (ACE) framework as a lens for identifying interactions, this study surveyed K-12 independent study students to assess their perception of the need for interaction with a support community while completing an online course. Results showed that students perceive the benefits of such a community and plan to receive support from parents, teachers, and counselors proximate to their location. The perception of the need was significantly greater for students taking a course for credit recovery than those taking the course for the first time. Course providers can coach independent study students and family on how to create a proximate community of engagement.

INTRODUCTION

K-12 online enrollments and course providers continue to increase (Gemin, Pape, Vashaw, & Watson, 2015). These courses provide more educational choices for students, particularly those unable to access traditional face-to-face instruction in schools and those who are required to recover credits they failed to earn in a face-to-face course (Clark, 2013; Gemin et al., 2015). However, online courses tend to have lower pass rates compared to similar face-to-face courses (Michigan Virtual University, 2014; Miron & Gulosino, 2016).

Historically, distance education courses required students to learn independently with little or no immediate interactions or support from their teachers and peers. As communication technologies improved so did the levels of support and interactions that programs were able to provide students. Researchers suggest that courses that are community focused and require interactions result in greater student presence, engagement, and persistence (Garrison, Anderson, & Archer, 2000; Moore, 1989; Rovai, 2002). These potential benefits come at the cost of restricting the flexibility in the time, location, and pace of learning which students value in choosing independent study courses (Anderson, 2008), particularly students who need to recover course credits for graduation.

Independent study courses are especially challenging for adolescent learners, particularly those who have previously experienced failure. Adolescent learners tend to have fewer of the self-regulation and metacognition skills required to successfully learn in a highly flexible learning environment (Barbour & Reeves, 2009). Thus these students are most likely to be successful if they have a local support system (Borup, Graham, & Davies, 2013). Many online providers now require that students be provided with an onsite facilitator, and research has focused on district-provided support structures. However, because many independent study programs do not provide significant support systems, the burden is often on the students themselves to curate their own local support system. Research to date has largely ignored the support systems that are curated by the students independent of the course provider (Borup, Graham, & Velasquez; 2013; Drysdale, Graham, & Borup, 2014; Gill et al., 2015; Hasler Waters, Barbour, & Menchaca, 2014; Hawkins, 2011). Song, Singleton, Hill and Hwa Koh (2004) stressed the importance of understanding online students' perspective—especially considering students are unlikely to seek support if they do not first understand how it would benefit their learning.

An important first step in this research agenda is to examine how students perceive their support needs. Credit recovery students' perceptions are likely different from those of students who are not recovering credit, due to

their learning attributes and previous learning experiences (Oliver, Osborne, Patel, & Kleiman, 2009). We addressed this research need by examining student perceptions of their support needs while enrolled in courses offered by a large independent study program. More specifically, we asked the following research questions:

1. What types of supports are perceived as important (or needed) by students who enroll in supplemental independent study online courses?
2. When students report that they perceive the importance of specific types of support, who do they believe will provide that support?
3. Are there significant statistical differences in the perceptions depending on the student motivation for enrollment (credit-recovery or non-credit-recovery students)?

LITERATURE REVIEW

This review of pertinent literature begins by considering the chronology of research in online courses in higher and adult education and K-12 schooling and by identifying theoretical frameworks supporting the design of online instruction in both these educational contexts. The focus then moves to issues of motivation: what reasons students have to enroll in online courses, why they choose supplemental independent study, and how that choice may conflict with best practices in online course design. After identifying reasons that flexible supplemental independent study courses will continue to be demanded, the researchers suggest a framework that considers creating a locally interactive community to support online enrollments.

Flexible Online Learning

Supplemental online courses are required when a student needs to acquire credits in order to meet graduation requirements. Students turn to options including "after school and summer programs, internships and independent study" (NCSL, 2012, Introduction para. 1) to receive the needed credits. Students generally choose these options because constraints of time and location prevent timely graduation using in-school options. Constraints include course(s) unavailable at their school, overloaded class schedules, and graduation deadlines inconsistent with regular academic periods (term or semester), in addition to family, employment, medical, emotional, or school discipline and security (bullying) issues that prohibit participation in a regular school (Ahn, 2011; Erb, 2004; Langenhorst, 2012; Patrick & Powell, 2009; Staker, 2011; Watson & Gemin, 2008; Wicks 2010).

Many states have partially responded to this need for flexibility by creating online schooling opportunities for K-12 students, which include establishing or authorizing virtual schools for supplemental courses and online charter schools for full-time enrollment. These schools employ instructional designs derived from successful online courses in higher education, employing interaction, collaboration, and community structures to support learning.

Virtual schools offering supplemental courses may experience difficulty establishing meaningful relationships with students and their parents. Such relationships are transactional, often lasting only as long as the student is enrolled in the course. Many of them are shallow and temporary, resulting in a sense of isolation for both the student and the teacher, which makes it difficult to provide and maintain effective communities supporting learning and engagement (Hawkins, 2011; Hawkins, Graham, & Barbour, 2012). By contrast, fully-online schools (typically online charter schools) are established and operate using many of the same policies and practices as brick-and-mortar charter schools, affording teachers and students time to develop lasting relationships and community (Gill et al., 2015; Hasler Waters, 2012).

Virtual and online charter schools using interactive instruction are widely available to students; however, many choose online courses from providers that employ an independent study model with the greater flexibility that meet their needs (Anderson, 2008). These self-paced, student-directed courses are designed to use rich learner-content interaction without required synchronous interactions and uniformed pacing. Self-paced independent study provides flexibility in the time and location of coursework and in the pacing and duration of the course. The format allows students to study at the time and pace convenient for them and "avoid the time constraints imposed by synchronous or paced learning" (Anderson, 2008, p. 349), which was their reason for taking the online course.

Even full-time online charter schools are being impacted by the student preference for flexibility provided by independent study models. Gill et al. (2015) found that 76% of the online charter schools in their study are relying on individualized, self-paced, student-driven courses (p. 9). The courses have been structured to support collaborative learning, but the schools are adopting the student-directed and student-paced independent study model to ensure flexibility, offer a more personalized learning experience, and respond to cost and funding pressures (Nastu, 2011; Staker, 2011; Trotter 2008; Watson & Pape, 2015). The student preference for these courses and their adoption by online charter schools provides evidence that independent study format courses will continue to be an important option for online students and providers. The ongoing demand provides incentive for researchers to identify effective strategies to incorporate collaborative community support elements into independent study courses so that learners derive the learning benefits such instructional designs provide.

Attributes of Adolescent Learners and Credit Recovery Students

Metacognition and self-regulation have been described as students' ability to plan, monitor, and modify their cognition while managing and controlling their efforts in the course and persisting through distractions (Pettyjohn, 2012). Successful students must identify cognitive strategies that work for them (Pintrich & De Groot, 1990). These educationally significant skills are less developed in adolescent learners than in adults, and adolescents require more support, structure, and quality interaction to be successful (Borup, Graham, & Davies, 2013). The increased need for structure and interactions is reflected in the way that states have organized their virtual schools, using teacher-led courses and providing support for required interactions (Gemin et al., 2015). This support is intended to address adolescents' lower levels of metacognition and self-regulation and to encourage the persistent student engagement needed for desired learning achievement.

Motivations for enrolling in supplemental courses can be categorized as either credit- recovery (CR) or non-credit-recovery (NCR) issues (Watson & Gemin, 2008). Credit recovery occurs when a student is repeating a course he or she previously attempted and failed (Watson & Gemin, 2008)—the most prevalent reason for student enrollment in supplemental online courses (Glass, 2009; Watson & Gemin, 2008; Watson, Pape, Murin, Gemin, & Vashaw, 2014; Wicks, 2010). Watson and Gemin (2008) observed that nearly 20% of online course enrollments in one large virtual school were for credit recovery (p. 8), while other investigators found credit recovery accounting for as much as 62% of student enrollments in online courses (iNACOL, 2013).

Students needing credit recovery exhibit the same characteristics as other adolescent students, but many face additional challenges. Many credit recovery learners have less developed skills for self-regulation and metacognition, weaker motivation for engagement in courses, lower levels of technical literacy, and more limited internet access compared to other adolescent students (Oliver et al., 2009; Roblyer & Marshall, 2002; Watson & Gemin, 2008). Credit recovery students have often "missed" credits due to outside pressures including poor family structures, employment needs, or medical or emotional concerns (Watson & Gemin, 2008).

These less developed learner attributes and challenging life and family circumstances mean that support may be even more important for credit-recovery learners than would be sufficient for adolescent students in general. Understanding the impact of these differences is important to helping credit-recovery learners succeed. Earlier we observed that students are unlikely to seek support if they do not first understand how it could benefit their learning. Understanding specific perceptions of CR and NCR students concerning their need for support may be important when attempting to help them identify and draw upon available resources to curate a support community.

Student Support Systems Frameworks and Research

The adoption of online courses in higher education preceded the widespread use of such courses for K-12 students; therefore, the early researchers on the effectiveness of online education studied courses offered by higher education institutions (Cavanaugh, Barbour, & Clark, 2009). Researchers have examined different pedagogical approaches and curriculum designs and suggest that collaborative-constructivist design frameworks asking members of a community to act together to solve authentic problems provides better learning outcomes (Boling, Hough, Krinsky, Saleem, & Stevens, 2012; Garrison & Akyol, 2013; Gunawardena, 1995).

Research suggests that collaborative constructivist models rich in community interactions result in increased learning (O'Leary & Quinlan, 2007; Rovai, 2002). Some of the frameworks proposed for effective online education include designs considering transactional distance and its related constructs of structure, dialogue, and autonomy (Moore, 1972; 1973); interactions involving learners, content, and members of a learning community (Moore, 1989); and the online community of inquiry supporting student engagement (Garrison, Anderson, & Archer, 2000). These frameworks guide course design employing activities, communication strategies, and collaboration to support the co-construction of meaning. Implementing some of these interactions and peer co-construction activities can be difficult in online courses, since students enter and exit the course at different times (Anderson, 2008), though researchers have suggested that building a sense of community under these conditions would still be possible (Haythornwaite, Kazmer, Robins, & Shoemaker, 2000).

When transferring these frameworks from higher education to K-12 courses, differences in the students and in the education environment that prevent direct application of higher education strategies to K-12 students must be considered. Young adult college students and adolescent high school students differ in their levels of maturity and in their development of significant learning skills such as self-regulation, internal locus of control, independence and autonomy, and metacognitive abilities (Barbour & Reeves, 2009; Borup et al., 2013).

Many investigations in K-12 online courses have been conducted within highly structured cyber and virtual schools designed to support collaboration and interaction (Borup, Graham, & Drysdale, 2013; Borup, West, Graham, & Davies, 2014; Curtis, 2013; Drysdale, Graham & Borup, 2014; Hasler Waters, 2012). The structure and policies of these schools required interactions with teachers and other students. Research investigating supplemental course enrollments in virtual schools demonstrated disconnectedness associated with independent study course designs (Hawkins et al., 2012; Gill et al., 2015).

Research shows that on-site facilitators or mentors are an important resource to assist students with online courses; they may be especially helpful for credit-recovery learners, particularly if the mentor is a certified teacher

in the subject area or receives appropriate professional development (Borup & Drysdale, 2014; Freidhoff, Borup, Stimson, & DeBruler, 2015; Taylor et al., 2016). Trained facilitators proximate to the student have improved student performance in an online course (Borup & Drysdale, 2014; Cavanaugh, 2013; Hannum, Irvin, Lei, & Farmer, 2008). Local or online facilitators are responsible for "fostering relationships, monitoring, and instructing" the students (Borup & Drysdale, 2014, p. 335).

Frameworks supporting instructional designs of online higher education that have previously guided designs for K-12 online courses have not addressed the differences in the learners' ability. More recent frameworks have been proposed to guide the design of online courses specifically for adolescent learners. Harms, Niederhauser, Davis, Roblyer, and Gilbert, (2006) provided a conceptual framework considering application of communication theories and strategies in K-12 virtual schooling. Pazhouh, Lake, and Miller (2015) proposed a policy framework to guide regulation of charter schools offering full-time online enrollment to K-12 students.

Adolescent Community of Engagement (ACE)

One of the frameworks proposed to help adolescent learners recommends developing a wider community of engagement, stressing presence and interaction involving teachers, students, and peers (Garrison, Anderson, & Archer, 2000; Moore, 1989). Borup (2014) and his colleagues added the presence and interaction of parents within the learning community. Their proposed adolescent community of engagement (ACE) has been suggested as a framework for designing online adolescent instruction that encourages student engagement and improved learning. Figure 1 illustrates this framework, which asserts that increasing presence and engagement by teachers and parents supports increased engagement by the student.

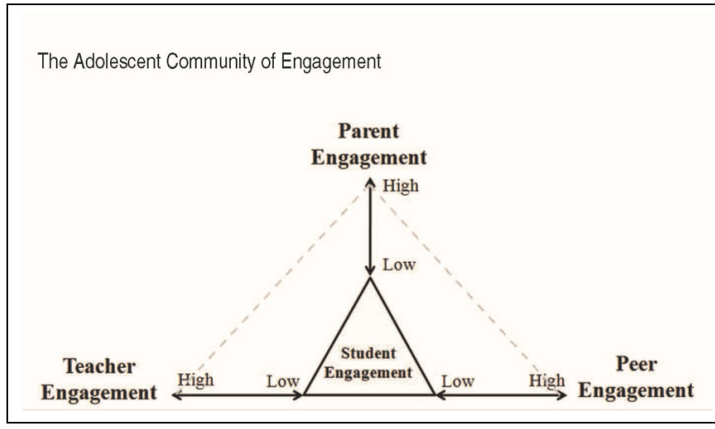

Figure 1. ACE framework from Borup et al. (2014, p. 111).

The ACE framework (Borup et al., 2014) proposed three different community roles external to the student: teacher, parent, and peer. From literature studying effective online instruction, framework elements were identified: roles, tasks, functions, and activities. The activities (actions or interactions) lead to increased engagement and learning. For example, the elements defined for the teacher role include the following:

- Three different functions (facilitating interaction, organizing and designing course materials, and instructing students)
- Ten different tasks, such as nurturing student relationships, monitoring and motivating student engagement, and providing intellectual and scholarly leadership
- Thirty-two actions or interactions, such as facilitating parent-instructor interactions, asking questions, or providing constructive feedback

The ACE framework suggested that while the roles of teacher, parent, and peer are performed by different actors, they often overlap in supporting engagement. Table 1 summarizes the different functions proposed for the ACE framework and shows the overlap of the roles when providing the functions.

Table 1
Overlapping Roles and Functions in ACE Framework

		ACE Role		
Function	Task	Teacher	Parent	Peer
Facilitating (monitoring & motivating)				
	Nurturing	X	X	
	Monitoring	X	X	
	Motivating	X	X	X
	Facilitating discourse & communication	X		
	Volunteering		X	
Organizing				
	Organizing materials and environment	X	X	
	Designing materials	X		
	Organizing timeliness and schedule	X	X	
Instructing				
	Providing instruction	X	X	X
	Offering assignment help	X	X	X
	Collaborating			X

Each of the roles has specified functions, tasks, and actions.

- Teacher role: three functions, 10 tasks, and 32 different actions or interactions
- Parent role: three functions, seven tasks, and 23 different actions or interactions
- Peer role: two functions, two tasks, and five different actions or interactions (Borup et al., 2014).

The detailed elements described in the ACE framework can be used as a lens for examining the operation of a learning community.

Need for this Research

Students' needs for flexibility and providers' responses to those needs mean students will continue to demand self-paced and student-driven independent study courses. The lack of significant research investigating K-12 students' experience in these online courses represents a gap in the literature that suggests a need for additional study. Pettyjohn (2012) suggested that the prevalence of online courses provides challenges for course designers, asserting that "a clear understanding of the factors that contribute to high school students' success or failure in online courses can help course designers, instructors, and school leaders improve and appropriately support online learning" (p. 14). Research that identifies designs that accommodate the student need for flexibility while also providing access to the benefits of collaborative communities of inquiry and engagement will benefit students' experiences and promote success.

Research Objectives

Researchers have observed that even when independent study students are isolated, they are not alone (Potter, 1998). However, the available literature shows a scarcity of research on the nature of student interactions with nearby individuals when completing an independent study course. Many online schools rely on parents to act as a significant instructing and monitoring resource (Gill et al., 2015; Michigan Virtual University, 2014). We suggest that successful independent study students participate in some form of interactive community supporting their engagement as they complete an independent study course. This community is not provided by the course supplier, but is staffed by resources curated locally by the learner. We refer to this support community as the proximate community of engagement (PCE). Our research attempts to identify the existence and study the functioning of this proximate community.

To identify the elements of a PCE, we used the ACE framework (Borup et al., 2014) to identify the presence of common elements in a functioning PCE. The purpose of the ACE community is to support student engagement and improve learning outcomes. If the community interactions described in the ACE framework are found in students' local interactions with those in their community, the PCE can be shown to exist.

METHODOLOGY

Setting and Participants

This research was conducted with the distance learning program of a large university in the western United States that offers online independent study high school courses in both a teacher-led interactive format and a self-paced student-led independent format. Students enrolled in either format have up to one year from the date of enrollment to finish the course. We emailed all students enrolling in the self-paced online independent study courses during the data collection period and invited them to participate in this study by completing an online survey. The students were adolescent students enrolling in high school courses to meet both core and elective credit requirements for graduation.

Instrumentation

We developed a new self-report survey instrument derived from the elements of the ACE framework to assess students' perceived need for a PCE. The preparation of the instrument began by analyzing each activity (action or interaction) suggested in the ACE framework, judging the likelihood that each activity would be perceivable by the student and would require a resource in a PCE. Activities were excluded if they were considered too difficult for the student to operationalize or perceive, or not sufficiently transparent for a researcher to observe. Independent study courses rely heavily on learner-content interactions, described by Moore (1989) as the "defining characteristic of education" (p. 2). Such courses include online interactions with the course materials in their design rather than interactions with another person. Any activities the researchers anticipated to exist within the structured course design were excluded from the instrument.

One or more survey items were then created to measure each included activity. The resulting 18 survey items used a six-point Likert scale. When students responded in agreement with a survey item, indicating that they perceived a need for the interaction described (*someone to help with . . .*), they were presented a list of individuals who could provide that support and asked to select all persons they thought would provide that help for them.

Reliability (consistency) of a survey instrument exists if the respondents are consistent in their ratings on the response scale (Davies, 2008). The reliability of the instrument used was assured by a review of the instrument with the originator of the ACE framework who assessed each item as to whether it was clear and whether it actually provided evidence of the associated ACE activity. The reliability of the instrument was further assessed by administering the survey using think-aloud methods to a student enrolling in a self-paced independent study course onsite at the independent study office. Both efforts were used to assess the clarity of the items and make improvements as required. These steps gave assurance that the instrument was reliable (consistent).

Data Analysis

Descriptive statistics were calculated for the demographic and Likert-style items to measure frequencies of perceived need for each ACE activity assessed. Because the data would best be considered ordinal in nature, we performed a Pearson Chi-Square calculation to compare the responses by the CR and NCR students to identify significant differences between the perceptions of these two groups (see Table 2). This allowed us to statistically compare the response distributions of the two groups to determine whether observed differences in their responses were substantive and not simply due to chance. The Pearson Chi-Square was considered significant at the .05 level.

Table 2
Data Collection and Analysis Methods for Study

Research questions	Data collection method	Analysis method
1, 2	Likert-style survey items 9-25 assessing the student's perception of the importance of different activities	Descriptive statistics/frequencies
3	Comparison of data for Likert-style items 9-25 grouped as credit-recovery or non-credit-recovery student response.	Pearson Chi-Squared test

FINDINGS

Email invitations were sent to 3,961 students who were enrolled in a self-paced independent study course during the two data collection periods. Survey responses were received from 1,131 students, a response rate of 28.6%. Surveys on which the participants did not answer a majority of the items were considered incomplete and not included in the data analysis. If participants answered all but one or two items, their surveys were included

because they were considered substantially complete. The final data set included a total of 1,009 surveys. The number of responses for the different items ranged from 1,004 to 1,009 (see Table 3).

Table 3

Percentages of Student Agreement with Survey Statements

Category	Item #	Survey Item ("I will be more successful if somone...")	N	% Agree			% Disagree		
				VSA*	SA	A	D	SD	VSD
Instructing	15	Explains course readings and materials when students have questions	1,005	36.6%	90.6% 20.7%	33.3%	8.2%	9.4% 0.6%	0.6%
	16	Helps with questions about assignments, papers, quizzes, etc.	1,005	26.7%	83.9% 22.3%	34.9%	13.7%	16.1% 1.1%	1.3%
	11	Sets aside a regular time to meet	1,007	16.1%	66.5% 14.0%	36.4%	29.2%	33.5% 2.6%	1.7%
	10	Reviews policies of online school and course at beginning of course	1,009	12.9%	65.6% 12.7%	40.0%	30.2%	34.4% 2.2%	2.0%
	22	Helps me learn how to self-regulate and learn in an online course	1,004	19.0%	63.6% 14.1%	30.5%	32.1%	36.4% 2.4%	1.9%
	17	Helps by talking to provider or online teacher on my behalf if needed	1,006	14.1%	60.5% 10.9%	35.5%	35.0%	39.5% 2.8%	1.7%
	18	Teaches me how to use the technology and resolves technical problems	1,006	15.7%	54.8% 9.0%	30.0%	34.1%	45.2% 6.3%	4.9%
	23	Shows me how to search online, and other library and community resources	1,008	15.7%	47.9% 9.0%	30.0%	34.1%	52.1% 6.3%	4.9%
	25	(Another student) taking the same subject or course collaboratively studies with me as I complete the course	1,006	10.3%	50.9% 10.2%	30.3%	39.3%	49.1% 4.8%	5.1%

Table 3, *Continued*

Category	Item #	Survey Item ("I will be more successful if somone...")	N	% Agree			% Disagree		
				VSA*	SA	A	D	SD	VSD
Organizing	9	Provides a designated place of study and access to technology and materials	1,007		86.8%			13.2%	
				35.1%	*24.2%*	*27.5%*	*10.8%*	*1.5%*	*0.9%*
	13	Helps set specific goals and deadlines	1,004		74.6%			26.4%	
				22.7%	*16.0%*	*34.9%*	*21.8%*	*2.8%*	*1.8%*
	12	Helps organize and plan my time	1,008		70.1%			29.9%	
				20.8%	*16.5%*	*32.8%*	*24.4%*	*3.4%*	*2.1%*
	24	Arranges contacts with student peers for study and collaboration	1,006		40.2%			59.8%	
				10.2%	*7.8%*	*22.2%*	*47.8%*	*6.5%*	*5.5%*
Monitoring and motivating	14	Checks on progress and reminds me to keep working and stay on schedule	1,005		75.7%			24.3%	
				24.2%	*17.2%*	*34.3%*	*19.3%*	*2.6%*	*2.4%*
	20	Encourages me to keep working when feeling unsuccessful	1,005		75.3%			24.7%	
				24.1%	*17.5%*	*33.7%*	*21.1%*	*1.9%*	*1.7%*
	19	Encourages and praises me for staying engaged in the course	1,006		68.8%			31.2%	
				21.2%	*15.2%*	*32.4%*	*26.4%*	*2.6%*	*2.2%*
	21	Regularly checks my grades and provides praise and encouragement as needed	1,006		67.9%			32.1%	
				21.7%	*15.0%*	*31.2%*	*26.4%*	*3.6%*	*2.1%*

*VSA=Very Strongly Agree; SA=Strongly Agree; A=Agree; D=Disagree; SD=Strongly Disagree, VSD=Very Strongly Disagree

Research Question #1: ACE Framework Elements Perceived as Important

We measured whether students perceived the importance of engaging with a proximate community based on their perception of the need to receive help through interactions with others. In the ACE framework, individuals acting in the roles of teacher, parent, and peer interact with the student through participation in various course activities. Using the descriptions of the interactions or activities defined for each role in the ACE framework, we asked if students agreed that this activity would be important as they completed their course. For analysis we organized the survey data according to the three primary functions described for the ACE roles: instructing activities, organizing activities, and monitoring and motivating activities. These align closely with the facilitator roles described in the literature (Borup & Drysdale, 2014; Borup et al., 2014).

The peer role in the ACE framework is fulfilled through interactive participation in a community of student peers. Such peer interactions overlap both the instructing and motivating functions. The students interact as peers by collaborating (a) to share previous knowledge and co-construct meaning (instructing) and (b) to provide stimulating and encouraging interactions (motivating). For purposes of this report, the activity of collaboratively participating in the peer community was categorized as an instructing activity.

Table 3 reports the data in each of the three categories, showing the agree/disagree responses for each item. All percentages reported are the percentage of students surveyed who agreed at some level with the statement associated with the specific activity described in the survey item (*agree, strongly agree, or very strongly agree*). Items on which 60% or more of students agreed with the statement were considered to be valued by the students; items showing less than 60% agreement were considered as not valued. The table is reported in descending order by the overall percentage of agreement within each of the three functional categories. The table also reports the percentage of responses for each item on the Likert scale from *very strongly agree* to *very strongly disagree.*

Instructing activities

Instructing activities are largely procedural; they include explaining concepts, assisting students with assignments, reviewing materials covered, tutoring, teaching a student study and self-regulation skills, and setting aside time to meet or collaborate with students. Students perceived instructing functions related to procedural and content help as most important to course success. They wanted to have someone available to answer questions about the course readings and assignments (91%) and to help with assignments, papers, and quizzes until the course was completed (84%). The procedural activities of setting aside a regular time to meet with the student (67%) and helping the student understand course policies and procedures (66%) were moderately valued by the respondents. The instructional activities

associated with using and supporting the technology and collaborating or studying with other students were the least valued in this category. It is likely these activities were already familiar to the students so that they were confident in their own abilities, or they did not see the need to collaborate with other students because they had chosen an independent study course.

Organizing activities

Organizing activities and resources support effective student participation in the course. The students perceived every activity in this category as important, with the exception of the need to help identify peers with whom the student might collaborate. A large majority (87%) strongly agreed with the importance of receiving help in arranging access to a designated place for study and obtaining adequate internet resources, equipment, and materials. They also considered help in setting specific goals and deadlines (74%) and in planning time for a regular schedule of study (70%) to be important. The activity of arranging collaboration with student peers had the lowest level of agreement (48%) of all the items in the survey.

Monitoring and motivating activities

Monitoring and motivating functions, which are more personal and interactive, include providing praise, feedback, and encouragement. Students perceived every activity in this category as important. Regularly providing encouraging feedback (75%) and furnishing reminders of schedules and deadlines (76%) were perceived as most important to the students. Focusing on praise, 69% of the students agreed that receiving specific praise for their continued task engagement was important; 68% of them valued praise and encouragement based on their performance.

Summary

Based on comparison of levels of agreement, students perceived support received to help understand course procedures and content, help organize their schedule, and help gain access to needed resources as most important to course success. Students also perceived personally interactive activities such as monitoring course progress and offering encouragement and praise as important to course success. Students were fairly complacent about the need for help facilitating interactions with peers, interacting with peers, and learning to use technology.

Research Question #2: Who Students Anticipate Will Provide the Important Roles or Functions

Students who agreed that an activity in the ACE framework was helpful were then asked to select from a list of potential providers who they expected would give them that support. Local options included parents and other family members, teachers and counselors at their local school, students at

their school, and friends. Distant resources (assumed to be associated with the course provider) were online teachers/tutors and fellow students enrolled in the course. Students also had the option to identify "other" resources they believed they would ask for help.

Tables 4 and 5 report the resources the students identified when they agreed that interaction was important. Table 4 identifies the role (teacher, parent, peer) from the ACE framework the students identified as the support resource. Selections associated with family members were combined in the parent role; teachers, tutors, and counselors from the local school were aggregated in the teacher role. Resources the students identified when they chose the "other" option were analyzed and categorized in the parent, teacher, or peer role if appropriate; responses that could not be appropriately categorized in one of the other three roles remained in the "other" classification. Table 5 reports the location of the resources that students identified (local, distant, other).

Parents and teachers were identified as the perceived resource for help in at least 81% of the responses for all non-peer-specific survey items; responses to some items indicated expectations for parent and/or teacher help more than 90% of the responses. Parents were the resource indicated most frequently for every item except "explaining course readings and materials when the students have questions," for which 42% of the responses selected teachers and 40% selected parents.

Students expected local resources (family, teachers, peers) to provide most of the interactions they agreed were important (see Table 5). More than 80% of the responses identified a local person who they expected to support their learning in the categories of both organizing and facilitating activities and monitoring and motivating activities. One exception was the location of help with the organizing activity of "arranging contact with other students": The online teacher or online student peer was identified as the resource in 36% of these responses.

The percentages identifying local resources were slightly lower for instructing interactions, for which students identified the online teacher and online peers more frequently. Local resources were still expected to provide help with the instructing activities in the majority of responses. Students anticipated instructing help from distant resources in more than 25% of responses to items associated with "explaining course materials" and "helping with assignments" (online teacher help) and "collaborating with another student" (online student peer help).

The findings for the students' anticipation of the role and location of support providers are now reported by each of the functional categories of the ACE framework.

Table 4
Student Identified Resource Accessed for Support

Category	Item #	Survey Item ("I will be more successful if somone...")	N	Teacher role		Parent role		Peer role		*Other*
				Local	*Online*	*Local*	*Online*	*Local*	*Online*	
Instructing	15	Explains course readings and materials when students have questions	1,609	41.7%		39.6%		13.2%		5.5%
				21.5%	*20.2%*	*31.8%*	*7.8%*	*7.3%*	*5.8%*	
	16	Helps with questions about assignments, papers, quizzes, etc.	1,475	39.9%		43.1%		12.4%		4.6%
				20.0%	*19.9%*	*34.6%*	*8.5%*	*7.3%*	*5.2%*	
	11	Sets aside a regular time to meet	990	33.9%		54.0%		7.0%		5.1%
				23.8%	*10.1%*	*47.9%*	*6.2%*	*4.1%*	*2.8%*	
	10	Reviews policies of online school and course at beginning of course	891	29.4%		60.5%		7.3%		2.8%
				20.8%	*8.6%*	*54.2%*	*6.3%*	*4.0%*	*3.3%*	
	22	Helps me learn how to self-regulate and learn in an online course	1,068	36.1%		49.6%		9.3%		5.0%
				21.4%	*14.7%*	*41.5%*	*8.1%*	*5.1%*	*4.1%*	
	17	Helps by talking to provider or online teacher on my behalf if needed	837	36.9%		55.6%		3.5%		4.1%
				23.7%	*13.3%*	*50.9%*	*4.7%*	*1.7%*	*1.8%*	
	18	Teaches me how to use the technology and resolves technical problems	881	33.7%		52.3%		10.7%		3.3%
				18.3%	*15.4%*	*42.7%*	*9.6%*	*6.6%*	*4.1%*	
	23	Shows me how to search online and use other library and community resources	821	39.3%		44.5%		12.3%		3.9%
				22.9%	*16.4%*	*36.7%*	*7.8%*	*6.3%*	*6.0%*	
	25	(Another student) taking the same subject or course collaboratively studies with me as I complete the course	782	NA		NA		81.6%		18.4%
				NA	*NA*	*NA*	*NA*	*53.2%*	*28.4%*	

Table 4, *Continued*

Category	Item #	Survey Item ("I will be more successful if somone...")	N	Teacher role		Parent role		Peer role		*Other*
				Local	*Online*	*Local*	*Online*	*Local*	*Online*	
Organizing	9	Provides a designated place of study and access to technology and materials	1,375	26.6%		60.0%		8.1%		5.2%
				20.6%	*6.0%*	*52.1%*	*7.9%*	*5.9%*	*2.3%*	
	13	Helps set specific goals and deadlines	1,085	31.2%		56.8%		6.2%		5.8%
				21.1%	*10.1%*	*50.4%*	*6.4%*	*3.9%*	*2.3%*	
	12	Helps organize and plan my time, including a regular schedule to work on the course	1,008	28.0%		59.5%		7.0%		5,5%
				21.2%	*6.7%*	*54.0%*	*5.6%*	*4.4%*	*2.7%*	
	24	Arranges contacts with student peers for study and collaboration	668	40.7%		26.0%		25.1%		8.1%
				19.9%	*20.8%*	*21.7%*	*4.3%*	*10.2%*	*15.0%*	
Monitoring and motivating	14	Checks on progress and reminds me to keep working and stay on schedule	1,157	31.7%		58.4%		6.5%		3.4%
				21.6%	*10.1%*	*52.1%*	*6.3%*	*3.7%*	*2.8%*	
	20	Encourages me to keep working when feeling unsuccessful	1,346	26.3%		59.7%		10.7%		3.3%
				16.1%	*10.2%*	*47.4%*	*12.3%*	*6.8%*	*3.9%*	
	19	Encourages and praises me for staying engaged in the course	1,159	25.6%		62.2%		8.5%		3.7%
				15.4%	*10.3%*	*50.3%*	*11.9%*	*5.1%*	*3.4%*	
	21	Regularly checks my grades and provides praise and encouragement as needed	1,108	30.1%		61.4%		5.7%		2.8%
				18.9%	*11.3%*	*51.8%*	*9.6%*	*3.5%*	*2.2%*	

Table 5

Location of Student-Identified Resource Accessed for Support

Category	Item #	Survey Item ("I will be more successful if somone...")	N	Local			Distance		Other
				Teacher	*Parent/ family*	*Student/ peer*	*Teacher*	*Student/ peer*	
Instructing	15	Explains course readings and materials when students have questions	1,609	*21.5%*	68.4% *39.62%*	*7.3%*	26.0% *20.2%*	*5.8%*	5.5%
	16	Helps with questions about assignments, papers, quizzes, etc.	1,475	*20.0%*	70.4% *43.7%*	*7.3%*	25.0% *19.9%*	*5.2%*	4.6%
	11	Sets aside a regular time to meet	990	*23.8%*	82.0% *54.0%*	*4.1%*	12.9% *10.1%*	*2.8%*	5.1%
	10	Reviews policies of online school and course at beginning of course	891	*20.8%*	85.3% *60.5%*	*4.0%*	11.9% *8.6%*	*3.3%*	2.8%
	22	Helps me learn how to self-regulate and learn in an online course	1,068	*21.4%*	76.2% *49.6%*	*5.1%*	18.8% *14.7%*	*4.1%*	5.0%
	17	Helps by talking to provider or online teacher on my behalf if needed	837	*23.7%*	80.9% *55.6%*	*1.7%*	15.1% *13.3%*	*1.8%*	4.1%
	18	Teaches me how to use the technology and resolves technical problems	881	*18.3%*	77.2% *52.3%*	*6.6%*	19.5% *15.4%*	*4.1%*	3.3%
	23	Shows me how to search online and use other library and community resources	821	*22.9%*	73.7 *44.5%*	*6.3%*	22.4% *16.4%*	*6.0%*	3.9%
	25	(Another student) taking the same subject or course collaboratively studies with me as I complete the course	782	*NA*	53.2% *NA*	*53.2%*	28.4% *NA*	*28.4%*	18.4%

Table 5, *Continued*

Category	Item #	Survey Item ("I will be more successful if somone...")	N	Local			Distance		Other
				Teacher	*Parent/ family*	*Student/ peer*	*Teacher*	*Student/ peer*	
Organizing and facilitating interations	9	Provides a designated place of study and access to technology and materials	1,375	*20.6%*	86.5% *60.0%*	*5.9%*	8.3% *6.0%*	*2.3%*	5.2%
	13	Helps set specific goals and deadlines	1,085	*21.1%*	81.8% *56.8%*	*3.9%*	12.4% *10.1%*	*2.3%*	5.8%
	12	Helps organize and plan my time, including a regular schedule to work on the course	1,008	*21.2%*	85.1% *59.5%*	*4.4%*	9.4% *6.7%*	*2.7%*	5.5%
	24	Arranges contacts with student peers for study and collaboration	668	*19.9%*	56.1% *26.0%*	*10.2%*	35.8% *20.8%*	*15.0%*	8.1%
Monitoring and motivating	14	Checks on progress and reminds me to keep working and stay on schedule	1,157	*21.6%*	83.8% *58.4%*	*3.7%*	12.9% *10.1%*	*2.8%*	3.4%
	20	Encourages me to keep working when feeling unsuccessful	1,346	*16.1%*	85.2% *59.7%*	*6.8%*	14.1% *10.2%*	*3.9%*	3.3%
	19	Encourages and praises me for staying engaged in the course	1,159	*15.4%*	82.7% *62.2%*	*5.1%*	13.6% *10.3%*	*3.4%*	3.7%
	21	Regularly checks my grades and provides praise and encouragement as needed	1,108	*18.9%*	83.8% *61.4%*	*3.5%*	13.4% *11.3%*	*2.2%*	2.8%

Instructing activities

Instructing activities offering procedural and content help, as well as help with specific course assignments, papers, or quizzes, demonstrated the overlap of teacher and parent roles. Of the student responses concerning the helping activity of "explaining readings and materials," 40% identified the parent and 42% identified the teacher. Of student responses to the item "help with assignments, papers, and quizzes," 43% identified interactions with a parent, while 40% expected help from the teacher. No other items in the survey showed such a close relationship between two different ACE framework roles.

Student responses agreeing with the need for support from teachers were equally divided regarding teacher location: Half chose a local teacher, and half preferred the distant teacher of the online course. Responses to such activities, which are specific to the course content, demonstrate the students' expectation that the teacher of the online course would be available for help. This expectation may not align with the plans of the course provider; many organizers expect a parent to provide many of these interactions (Gill et al., 2015). Overall, approximately 70% of responses identified a local resource (parent or teacher/counselor) to provide help with these instructing activities.

The survey item concerning peer collaboration was perceived as the study's least important instructing activity. Of the students who agreed on the importance of collaboration, 82% identified another student as their collaborating partner, while 18% designated other friends or family collaborators. Nearly 75% of the students expecting to collaborate with student peers identified local students as their partners, with the rest expecting to collaborate with other students in the online course.

The remaining instructing activities are more personal, including matters like setting aside regular time to meet with the student, encouraging engagement, and assisting with technology. Students identified the parent role as the resource for these more personal interactions.

Organizing activities

The nature of the four organizing activities in the ACE framework places them in the student's local environment: organizing physical space, technology, time, and peer collaboration opportunities. Approximately 60% of the student responses identified the parent as the resource they would ask for support (approximately 30% identified teachers)—more than 80% of these anticipated helpers were in the students' local area.

Monitoring and motivating

The results for the monitoring and motivating activities were very similar to those for organizing activities. The four items in this category focused on offering praise, encouragement, and feedback to inspire greater engagement and performance. These actions are personal and interactive. The students

identified parents for these interactions in approximately 60% of their responses to each survey item. Teachers were the helping resource identified in 25% to 30% of responses to each of the four items in this category. Students valuing interactions described as "encouraging work when the student was feeling unsuccessful" identified peers and fellow students as a resource they would access. The percentage of student responses expecting support for monitoring and motivating activities to come from local resources ranged from 83% to 85% for the different items.

Summary

Parents were the resource most often identified to help students with the activities that they perceived as important. Local resources (parents, teachers, peers) were identified as the resource for student interactions in approximately 80% of the responses. The finding suggests that students who perceive they will benefit from interactions described in the ACE framework plan to access that help from parents and other proximate resources.

Research Question #3: Differences in Credit-Recovery and Non-Credit-Recovery Students

The last research question focused on the difference, if any, between non-credit-recovery (NCR) students, who were taking the course for the first time or retaking the course to improve their grade, and credit-recovery (CR) students, who were taking the course to recover credit lost due to a failing grade in a previous course attempt.

Sample demographics

Of the 1,009 survey responses, 60 were received from CR students (5.9%). The literature suggested that credit recovery is the most prevalent reason for student enrollment in supplemental online courses (Glass, 2009; Watson & Gemin, 2008; Watson et al., 2014, Wicks, 2010). Investigators found nearly 20% of enrollments in one large virtual school (Watson & Gemin, 2008) were CR enrollments. Researchers in another study (iNACOL, 2013) found as many as 62% of enrollments could be classified as CR. A CR student ratio of 5.9% in our sample was considerably lower than the ratio we had anticipated based on the literature. This percentage implies that the sample for this study differs from samples typical of other studies and thus creates challenges with generalizing the findings to other independent study students and providers.

The low CR ratio in this sample may result from differences in the student population served by this course provider when compared to the students from other providers participating in other studies. It may also be substantially affected by the selection criteria for those invited to participate in

the survey. Enrolling students who were associated with institutional customers (districts, charter schools, private schools) so that their enrollment was billed to the institution were not included. This distinction was made in an effort to sample only those students who were truly independent study learners and not likely to have had access to a ready-made community structure provided by the enrollment-paying institution. Possibly institutional customers may enroll students for credit recovery purposes more than students who enroll (or are enrolled) independently. These criteria may have introduced bias towards NCR enrollments in the sample.

Statistical results

Of the 18 items included in the survey, eight were statistically significant at the .05 level. Of the 10 items that were non-significant, the percentage of agreement of the CR and NCR groups was virtually the same, or the distribution of the responses across the three options (agree, strongly agree, very strongly agree) was approximately the same for each group. Table 6 reports the statistical measures for the eight survey items that were significant at an alpha of .05 when comparing the responses from the CR and NCR groups. The table is sorted in ascending order by the calculated p-value. Table 7 reports the percentage of agreement and the distribution of the strength of agreement in responses for the eight items which were significant.

Table 6
Results of Chi-Squared Test

Category	Item #	Survey item ("I will be more successful if someone …")	n	χ^2	p	η^2
Monitoring Motivating	21	Regularly checks my grades and provides praise and encouragement as needed	1,006	16.192	.006	.016
Instructing	11	Sets aside a regular time to meet	1,007	15.419	.009	.015
Monitoring Motivating	19	Encourages and praises me for staying engaged in the course	1,006	14.397	.013	.014
Monitoring Motivating	20	Encourages me to keep working when feeling unsuccessful	1,005	13.251	.021	.013
Monitoring Motivating	14	Checks on progress and reminds me to keep working and stay on schedule	1,005	13.097	.022	.013
Organizing	9	Provides a designated place of study and access to technology and materials	1,007	12.692	.026	.013
Instructing	10	Reviews policies of online school and course at beginning of course	1,009	12.014	.035	.012
Instructing	15	Explains course readings and materials when students have questions	1,005	11.467	.043	.011

Table 7

Results of Chi-Squared Test: Agree Responses by Student Type

				CR Students				NCR Students			
				Agree%				Agree%			
Category	Item #	Survey item ("I will be more successful if someone. . . ")	p	n	*VSA*	*SA*	*A*	n	*VSA*	*SA*	*A*
Monitoring Motivating	21	Regularly checks my grades and provides praise and encouragement as needed	.006	60	*41.7%*	78.3% *10.0%*	*26.7%*	946	*20.4%*	67.2% *15.3%*	*31.5%*
Instructing	11	Sets aside a regular time to meet	.009	60	*31.7%*	70.0% *15.0%*	*23.3%*	947	*15.1%*	66.3% *13.9%*	*37.3%*
Monitoring Motivating	19	Encourages and praises me for staying engaged in the course	.013	60	*38.3%*	81.7% *18.3%*	*25.0%*	946	*20.1%*	68.0% *15.0%*	*32.9%*
Monitoring Motivating	20	Encourages me to keep working when feeling unsuccessful	.021	59	*42.4%*	86.4% *16.9%*	*27.1%*	946	*22.9%*	74.6% *17.5%*	*34.1%*
Monitoring Motivating	14	Checks on progress and reminds me to keep working and stay on schedule	.022	59	*37.3%*	76.3% *22.0%*	*16.9%*	946	*23.4%*	75.7% *16.9%*	*35.4%*
Organizing	9	Provides a designated place of study and access to technology and materials	.026	60	*51.7%*	91.7% *25.0%*	*15.0%*	947	*34.0%*	86.5% *24.2%*	*28.3%*
Instructing	10	Reviews policies of online school and course at beginning of course	.035	60	*25.0%*	75.0% *16.7%*	*33.3%*	949	*12.1%*	65.0% *12.4%*	*40.5%*
Instructing	15	Explains course readings and materials when students have questions	.043	60	*40.0%*	90.0% *33.3%*	*16.7%*	945	*36.4%*	90.7% *19.9%*	*34.4%*

Table 7 shows the factors comparing the CR and NCR groups that contribute to the findings of significance. Finding significance is affected by both the overall difference in the percentage of students in each group agreeing with the statements and by the distribution of the strength of that agreement across the Likert scale between the two groups. For example, the difference in the responses by the CR and NCR groups to the question of whether students thought it would be helpful if "someone encouraged and praised me for staying engaged in the course" (Item 19) was significant ($\chi^2(5) = 14.397$, $p = .013$, $\eta^2 = .014$, which is considered a small effect size). The significance was affected by both level of overall agreement (81.7% of the CR students agreed, while only 68% of the NCR students agreed) and by the difference in the distribution of the strength of agreement (38.3% of CR students *very strongly agreed*, while only 20.1% of NCR students agreed that strongly).

The difference in the responses between the CR and NCR groups for Item 15, which asked students if they perceived it would help if "someone explained course readings and materials when [they had] questions" was also significant ($\chi^2(5) = 11.467$, $p = .043$, $\eta^2 = .011$, which is considered a small effect size). However, in this instance, the percentage of overall agreement was virtually the same for the CR and NCR groups (90.0% and 90.7% respectively), but the strength of agreement was different. Of the CR students, 73% *strongly* or *very strongly* agreed with this statement, compared to 53% of the NCR students who agreed that strongly. The significant difference for this item did not result from the overall levels of agreement, but from the distribution of the strength of agreement between the two groups.

Overall, a significant difference indicates that a difference was found in the groups' perceptions of the importance of support from those fulfilling the different roles. The results appear to indicate that CR students value these interactions more than the NCR students for each of these significant items. CR students may be responding to their previous failure as they believe that more interaction and help from others will enable them to succeed in this attempt. This is an encouraging result for supporting these CR students with a community of engagement. The responses indicate that they are likely to accept help if they can identify those willing to provide it and to receive coaching in how to establish those relationships and interactions when they enroll.

DISCUSSION AND IMPLICATIONS

The purpose of this study was to determine whether students perceived the need for support from a proximate community of engagement (PCE) in completing an online independent study course. The study further asked if there was a difference in the perceptions of the need for such help between CR or NCR students.

Overall, the study confirmed that students enrolling in an online independent study course believed that interacting with a local PCE would be important to their success in the course and that they planned to access that support from local resources more frequently than from the distant resources of the course provider. Results also showed that students thought they would access a PCE comprised of parents and their local teacher and/or counselor.

The study findings suggested that students taking the course for credit recovery tend to value PCE interactions more than do students taking the course for other reasons. Pettyjohn (2012) found that credit recovery students were often discouraged and doubtful when beginning their online coursework, that many had suffered environmental, family, and self-regulation issues that made academic success unlikely. She observed that these students seek those they trust when they need to find support or to share successes. Trusting relationships helped CR students in the study develop ownership and autonomy, and the support staff became their trusted partners. Franco and Patel (2011) found that students who had previously failed and were forced to attend courses with younger students suffered from low self-esteem. These authors suggested that associations with and support from a community who expressed confidence that a student could succeed created a "greater confidence in [his or her] own abilities" (p. 25).

CR students' perception of a greater need for help may come from recognizing the issues that caused their failure during their previous attempt at the class. They may be aware that trusted help and support will likely lead to greater success. The results of this study show that they recognize the support proximate resources could offer, providing the on-site facilitator functions of mentoring and instructing (Borup & Drysdale, 2014; Borup et al., 2014).

Implications for Practitioners

The students' perception of the need for help and the resources that they identified to provide that help should be considered by designers and instructors of online independent study courses. Evidence suggests that collaborative courses with interaction to support the students in constructing meaning achieve the best learning outcomes. Students in this study perceived the need to engage in the activities of the ACE framework with a proximate community, a finding that indicates students would be willing to access community support if it can be curated. This finding also aligns with results of previous research and with the expectation of many course providers that students will receive parental help with their schoolwork and that parents will provide instructional support and also monitor and encourage

student engagement (Gill et al., 2015; Hasler Waters, Menchaca, & Borup, 2014; Woodworth et al., 2015). Researchers have found that specific training and instruction in processes of facilitation will improve its effectiveness (Davis et al., 2007; Hannum, Irvin, Lei, & Farmer, 2008; Staker, 2011).

Recognizing this critical responsibility, many virtual schools and course providers have prepared materials to assist parents or mentors to understand their important roles as they assist their students in online coursework. Examples include the *Supporting Students—A Parent's Guide* website provided by the North Carolina Virtual Public School (NCVPS, n.d.), the Ohio Virtual Academy's *Parent Handbook* (OVA, 2015), the Florida Virtual School's *Student and Parent Handbook* (FLVS, 2016), and documents included in the toolkit prepared by Michigan Virtual University (Michigan Virtual University, 2014).

The Michigan Virtual University (MVU) toolkit includes documents intended to assist those providing on-site support for online students. *The Parent Guide* (Michigan Virtual University, 2016a) is designed to help "parents, guardians, counselors and others who want to help students decide whether online courses are a good option" (Michigan Virtual University, 2016a, Introduction). Materials in the guide help students and their advocates decide whether they are prepared for and the supports they might need in order to succeed in online courses. It also informs the on-site supporter or facilitator of the support that will be required. *The Student Guide (*Michigan Virtual University, 2016b) provides information "from teachers, mentors, and students who have personal experience with online teaching and learning [that helps] students know what [they] are getting into and what kind of support [they] will need to be successful" (Michigan Virtual University, 2016b, Introduction). *Mentor Fundamentals* (Michigan Virtual University, 2016c) is a publication "full of practical, research and experience-based best practices for [those] who provide on-site support for online learners" (Michigan Virtual University, 2014, pp. 7-8). These resources are examples of guides instructional designers and course providers can create to support students' success by preparing them and their proximate communities of support.

The greater sense of need for support expressed by CR learners in this study indicates their readiness to accept help in order to succeed. The special needs and challenges faced by CR students should be considered in designing on-site support materials for those who may participate in the student's proximate community. The need for building trust and mitigating some of the environmental and self-efficacy concerns confronted by CR students (Pettyjohn, 2012) may require additional best-practice-based mentoring and facilitation guidance for on-site supporters. The difference in the levels of support needed and the nature of that support may require greater investment by the parent or other local individual(s) helping the CR student.

Consequently, different mentoring and coaching materials may need to be provided for the student and proximate supporters based on the CR or NCR status of the student. Screening questions to determine the CR or NCR status could be added at the time of enrollment to help providers and facilitators decide which guidance materials will be most helpful.

Adolescent students and their advocates may require coaching on successfully curating a proximate support community. Student responses in this study acknowledged the people the students believed they would interact with to receive the help they perceived as important. Students may need guidance on methods to procure assistance as they prepare for the course. Instructional designers should consider introductory lessons and assignments at the beginning of each course to coach the students (and their parents or advocates) in the processes of identifying proximate resources and enlisting the support that will help students succeed. Most students in this study identified a parent as the resource they planned to access most often. Parents need to be engaged and informed of their role in that community and the commitment required. The actual creation of a proximate support community could be further supported by making the curation and information activity an element of the students' grade.

Implications for Research

The previous implications section of this report identified some research needed to better support the curation and effective operation of a proximate support community. *The Parent Guide* and *Mentoring Fundamentals* publications provided by MVU (referenced above) are research and experience based examples. Additional research will identify other recruitment, communication, and training activities that students and their advocates can use to curate an effective proximate support community. This study shows that students perceive the need for ACE framework activities. Additional research on the proximate individuals who will most effectively engage with the student in those activities, as well as the best practices to identify and recruit those participants, will enrich the community-building activities designed into the course.

In this study, the ratio of CR and NCR students participating differed from the ratio expected based on the literature. The percentage of CR students was much lower than expected. Reasons for this may have included the criteria for selecting students, the timing of the survey administration, and peculiarities of the provider. This weakness has implications for the usefulness of transferring these findings to other online course providers and students. Future research with data collected from a more general pool of students during different parts of the semester or term or from other

schools may provide a balanced mix of CR and NCR students more consistent with the literature and add to the evidence of differences between the two student enrollment groups. Such differences might also confirm the strength of the perception findings in this study.

Future research opportunities might confirm the finding that students will engage in a PCE. Such studies might collect data from students at the end of their course to see if and how they actually used a PCE. Studies could also be designed that measure the degree to which students used the PCE and the effects of the frequency and quantity of that interaction on their learning achievement. Another helpful study could examine the frequency and quantity of interactions with the different resource persons in the PCE (teacher, family, counselor, peer, etc.) as correlated to student performance in the course.

This study and others that could follow will inform the best practices that can be implemented in the course design to curate a proximate community and coach the student, along with parents and other advocates, in recruiting an effectively functioning PCE. The research will suggest the individuals with whom the student should interact, the nature of effective interactions, and the content and frequency of preferred interactions in order to maximize the possibility of success in the online course.

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