



Peabody College of Education
and Human Development

Improving Stakeholder Buy-In Through Legitimate Participation

The Improvement Story of IowaBIG

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Crescere aude

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AREA OF INQUIRY AND PARTNER

Throughout time, educators have tried to make learning more meaningful and real for students. Yet, educational systems in the 21st Century still struggle to make learning relevant and motivating. For this study, we partnered with a school program in Cedar Rapids, Iowa whose mission is to do just this.

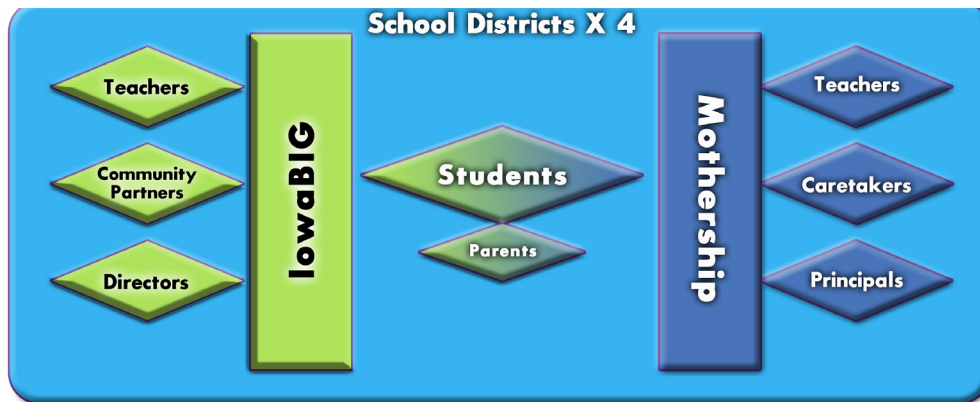
IowaBIG is a project-based learning program where students spend half of their day at their home high school and half a day at their IowaBIG experience. Here, students partner with community organizations to complete real-world projects that impact the community they live in. BIG leaders hope that their work has a wide-ranging impact on both students and the community. The desired impact includes increased community buy-in to public educational systems, equipping students with work-place-skills of collaboration and leadership, breaking down the four walls of the classroom, and networking students in the community so they might return as adults.

For this study, we were asked to investigate the following pressure points experienced by the organization:

- Withdrawal of one entire partner school district from the program
- Lack of full cooperation from some schools to recommend students – likely stemming from counselors who do not ‘sell’ the program
- Projects are often not completed in a school year, if at all
- Continued struggles with measuring and communicating what students are learning

We set out to understand the stakeholder experience to find opportunities for improvement. We found that students and parents must navigate two systems of learning - traditional and PBL (Figure 1). We conjectured that being pulled between the two different systems creates a push-pull that can be disorienting for students and parents.

Figure 1: *IowaBIG Stakeholder Map*



Three areas of research informed our understanding of challenges facing IowaBIG: stakeholder salience theory (Figure 2), communities of practice, and project-based learning (PBL). Stakeholder salience theory asserts that an interplay of the attributes of power, legitimacy, and urgency can impact the nature of the relationship between an organization and a stakeholder. Stakeholders who experience a lack of legitimacy can become a liability to the work (Mitchell, et al., 1997).

Legitimate peripheral participation and communities of practice theories informed our thinking about how to intentionally increase stakeholder legitimacy. IowaBIG operates as its own community

EXECUTIVE SUMMARY

of practice. Learning communities can intentionally design systems to help a member become a legitimate participant. They do this by ensuring that there is clarity of purpose, unified application of processes, and visibility of the products produced (Wenger, 1998).

Finally, research in the field of PBL has provided the backbone for the Buck Institute for Education’s guidelines for “Gold-Standard PBL” (2022). They have identified seven design elements and seven teaching practices that are essential for implementing effective PBL programming. This PB works resource provides exemplary practices to which we compared BIG’s approach.

CONCEPTUAL FRAMEWORK

Our conceptual framework emerged from an intersection of stakeholder salience theory and communities of practice. Stakeholder legitimacy is critical for a healthy stakeholder relationship. To increase the legitimacy stakeholders feel and to better integrate them into the community of practice, there needs to be clarity of the organiza-

tion’s purpose, a unified application of processes, and visibility of the organization’s products (Figure 3).

Using this as our conceptual framework, our research centered on the following research questions:

- What do stakeholders understand to be the work of IowaBIG? (Purpose)
- How do stakeholders experience IowaBIG? (Process)
- How does the stakeholder experience with IowaBIG align with exemplary PBL programs? (Products)

Figure 2: Stakeholder Salience Theory

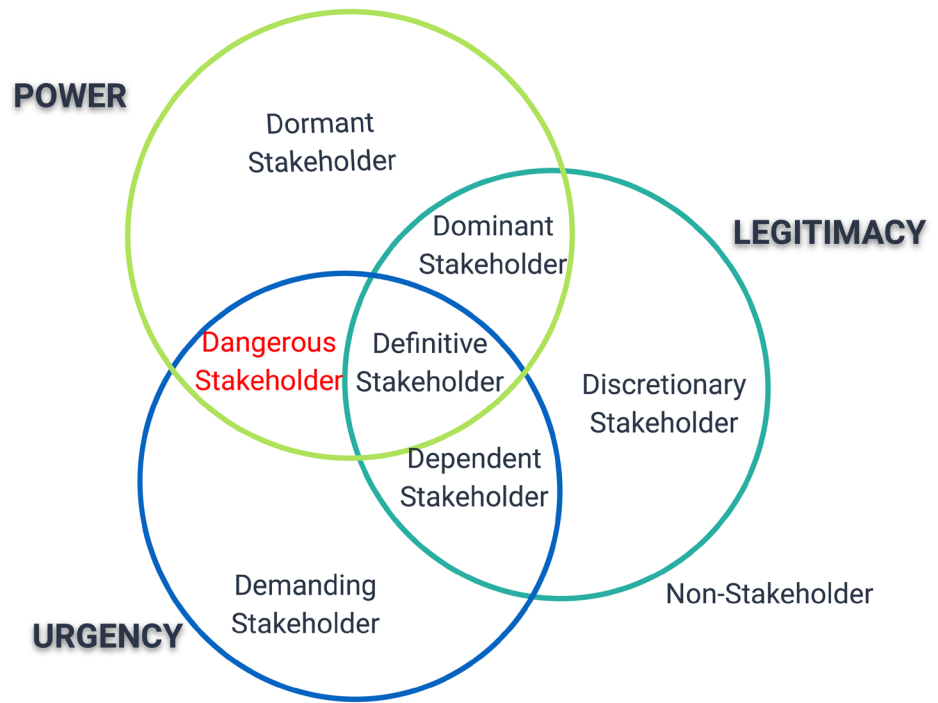
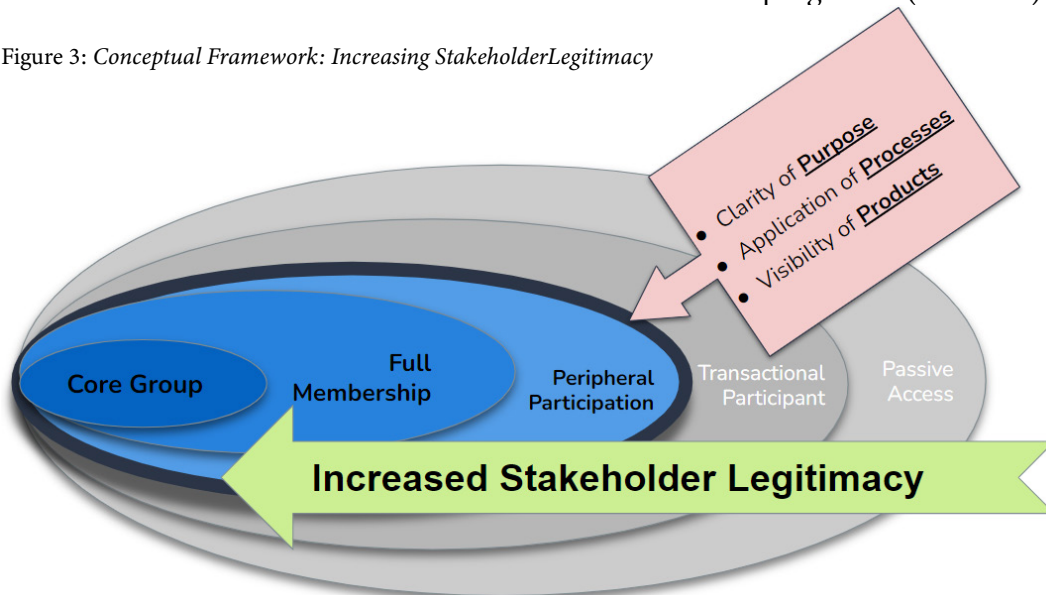


Figure 3: Conceptual Framework: Increasing Stakeholder Legitimacy



PROJECT DESIGN

We used a mixed methods approach to collect and analyze data for our study. We gathered preliminary data from IowaBig's public presence online, a prior program evaluation, and IowaBIG end of year surveys. New surveys and semi-structured interviews provided data specific to our research questions that pre-existing data had not addressed. Institutional materials provided

further information that helped triangulate our findings.

FINDINGS AND RECOMMENDATIONS

Our data analysis supported the following findings and recommendations:

Research Question	Findings	Recommendations
<p>Q1 – Purpose:</p> <p>What do stakeholders understand to be the work of IowaBIG?</p>	<ul style="list-style-type: none"> • Lack of convergence in understanding vision and purpose of IowaBIG 	<ul style="list-style-type: none"> • Consistently communicate a single clear vision • Recommend "Passion, Projects, and Community"
<p>Q2 – Process:</p> <p>How do stakeholders experience IowaBIG?</p>	<ul style="list-style-type: none"> • Students love IowaBIG • Students want more accountability structures • Parents and counselors need to be intentionally brought into community of practice 	<ul style="list-style-type: none"> • Continue introductory 3-week project • Revisit minimum standard of care for parents and follow with fidelity • Add minimum standard of care for motherships similar to one for parents • Implement scrum processes with more fidelity (daily scrums)
<p>Q3 – Product:</p> <p>How does the stakeholder experience with IowaBIG align with exemplary PBL programs?</p>	<ul style="list-style-type: none"> • IowaBIG aligns with exemplary PBL practices: <ul style="list-style-type: none"> ◦ Authenticity of projects, ◦ Student voice and choice, ◦ Positive culture ◦ Engaging and coaching students • PBL improvement opportunities: <ul style="list-style-type: none"> ◦ Management of activities ◦ Assessment of student learning ◦ Sustained inquiry ◦ Public product 	<ul style="list-style-type: none"> • Share project information with all stakeholders • Consistently communicate standards progress



INTRODUCTION

Research on motivation indicating that autonomy and connection are key factors in developing intrinsic motivation (Deci & Ryan, 1980) has led some schools to look for opportunities to provide student voice and choice. Our partner organization is rooted in this movement and works to expand opportunities for all students to access a learning program that offers high levels of student self-determination. IowaBIG, is a competency-based educational program that runs adjacent to the traditional high school experience. Students who elect this path spend part of each day in the community working on real-life projects presented by local businesses and non-profit organizations. Teachers assess real-world tasks that students complete for the partner organizations as evidence of learning. For two hours a day, students work in teams and engage with learning in non-traditional ways. The remainder of their day is spent in a traditional setting at their home school, or what students refer to as their ‘mothership.’

IowaBIG initially described their biggest challenge to be communicating about the learning that takes place at BIG with students, families, and schools. A quick survey of publicly available documents indicated that not all stakeholders could be considered allies. On the Education Reimagined website, for example, a student notes in an interview that counselors do not think that IowaBIG students learn anything and try to talk students out of attending (King, 2020). Off the record conversations with community partners and parents uncovered frustrations with the lack of structure to the partnerships and student learning. This told us that the program needed to attend to the needs of their stakeholders. Without the support of the community, project opportunities will dry up. Without the support of the schools, fewer students will be advised to pursue this pathway. Without the support of the students and parents, others will be dissuaded from trying the BIG way. In the long run, without stakeholder support, the viability of BIG could be at stake. Stakeholders who do not truly understand the goals and methods of the program are at risk of becoming detractors.

Recently, one of the partner districts announced that they will be removing their support from the program, effectively shrinking the enrollment by 39%. Publicly they cited budget and scheduling concerns. Their plan to start their own program and “have it connect more to their own curriculum” hints that there is also a disconnect with that stakeholder group (King, 2021). Stakeholder engagement and understanding of the IowaBIG vision and program becomes critical in determining its strength and viability for continuation into the future.



In our mixed-methods capstone project, we sought to explore the IowaBIG stakeholder experience - the current state and growth opportunities. We discuss stakeholder factors that determine salience and barriers to full participation/cooperation.

ORGANIZATIONAL CONTEXT

IowaBIG is a competency-based program for high school students complimenting the traditional high school experience. The concept emerged after a devastating flood in 2008 that left some education and business leaders wondering, “What if we could just start over? What would we build?” These leaders organized a group of nearly 60 community partners to participate in an experience they dubbed *The Billy Madison Project*. Participants collaborated as they researched educational innovations in America and spent a full day experiencing life as a high school student in the Cedar Rapids Community School District. In 2013, the IowaBIG program started with just twelve students in Cedar Rapids and nearby College Community Prairie High. These two charter districts allocated resources to get the program up and running. IowaBIG attracted much attention and by the 2019-2020 school year, there were eight high schools across five districts opting in to the IowaBIG program serving over 200 students (Figure 4).

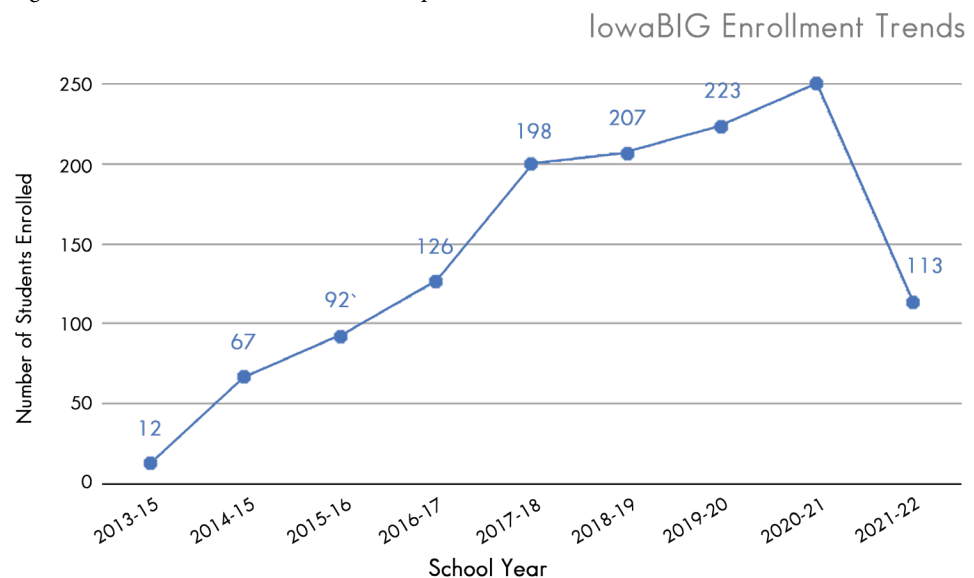
While it is a program that is connected to those schools, IowaBIG operates as a separate entity from the traditional high schools in the districts it serves. Students from tenth through twelfth grades spend five to ten hours a week based out of one of the two IowaBIG offices. Students work in teams on projects that are either crafted by the student teams or on projects that come to the program from community and business partners. Instructors serve as project managers who help guide teams through the design

process as students complete a variety of project tasks. Instructors then connect the tasks to priority learning standards identified by the five different participating school districts. State standards that are not addressed during the scope of the project work are addressed once a week in a seminar setting.

An example of this is a community functional art project completed by a student team for the National Czeck and Slovak Museum in town. Over 21 months, a team of students worked with the museum, the city, and a metal artist to plan, design, and create functional public art. Work towards completing the project counted as evidence of learning the standards. For example, correspondence with partners contributed to the completion of language arts standards and working with the city contributed to the completion of government standards.

The focus of learning at IowaBIG is the process of authentic learning more than the traditional approach of content acquisition. Student teams meet daily where they work on their community projects. Staff content teams meet every six weeks to go over the standards that have been achieved and note the standards that have not. There are no pre-set standards for any project. Rather, if, during a project standards are incidentally covered, it is noted in BBQ, BIG’s proprietary app for tracking standards completion. Any missing standards are added into a course seminar. Four times a year, students meet one on one with their staff mentor

Figure 4: IowaBIG Total Enrollments 2013-present



to complete a self-assessment and progress check. Students are awarded end of semester course grades. There are no additional progress reports. The focus of student self-assessments is based in the Universal Core Constructs (UCC). Course grades are made up of student progress in the UCC and in the content standards.

IowaBIG has a wide array of stakeholders across four school districts (Figure 5). Each district has their own set of mothership (home district) stakeholders including parents, counselors, teachers, and administrators. On the BIG side of the learning, they have teachers, students, and community partners. This capstone project looks at the stakeholder experiences so organizational leaders can make targeted improvements that will help the organization.

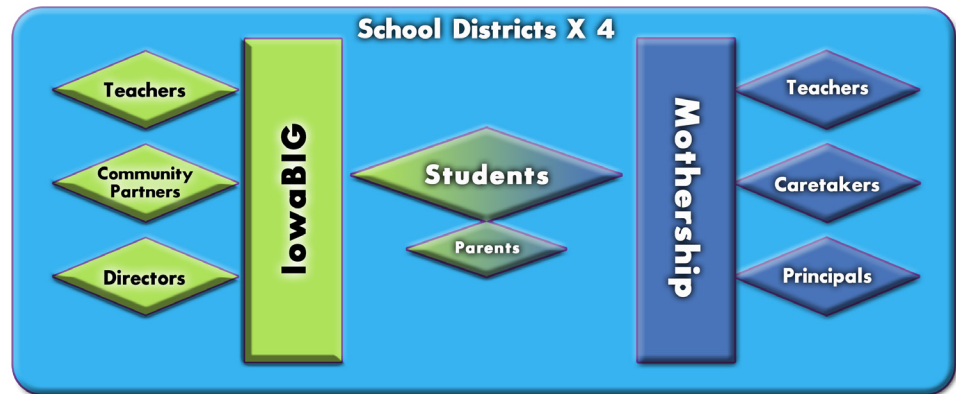
Note. The stakeholder map shows where each group is located. Students and parents are mediating stakeholders between the two learning systems.

PROBLEM OF PRACTICE

This capstone study seeks to further clarify and understand findings from a 2019 evaluation of the program (Feldman et al., 2019). Springpoint evaluators found that “because of a lack of clear philosophy about how assessment is used at IowaBIG, these practices are applied inconsistently towards students” (2019, p. 6). Over the course of the 8-year program, leadership at IowaBIG has developed several iterations of processes for measuring, recording, and documenting student learning for teacher records. While reviewing the Springpoint Grant Review report with the executive director, he shared with us that the greatest struggle continues to be finding ways to measure and communicate what students are learning as they complete their projects.

The problem of practice facing the client organization relates to an inconsistent understanding across stakeholder groups

Figure 5: Map of IowaBIG Stakeholders



related to key aspects of ‘the what, the why, and the how’ of the IowaBIG program. Early inquiries into BIG hinted that the primary areas of misunderstanding include the vision and mission of the IowaBIG program as well as the goals for and assessment of student learning. We can see this on the publicly available Education Reimagined website where a school leader notes that counselors talk down IowaBIG. “Recently one of my students was derided by their counselor for getting English credit at IowaBIG.” (Cornally, 2016).

This inconsistent understanding leads to tensions between the two systems that students move in and out of every day. Ultimately, this has the potential to impact stakeholder perceptions of the program. Because stakeholders have the power to influence how the program is represented, they can impact future enrollment, and, thus, the future viability of the program.

In our study we examine how stakeholders interact simultaneously with two different learning systems and how their participation and experiences may compete with or contradict one another. We look for areas of tension and conflict, along with areas of shared understanding that are created and experienced through this dual participation. We analyze the products created by IowaBIG and its students, compare practices between the homeschools and IowaBIG, and assess the different perspectives and needs of the stakeholder groups. Our focus was to help IowaBIG identify strengths and weaknesses within their current recruitment, onboarding, and dissemination processes, and to identify opportunities for developing integrated storylines that align stakeholder experiences.

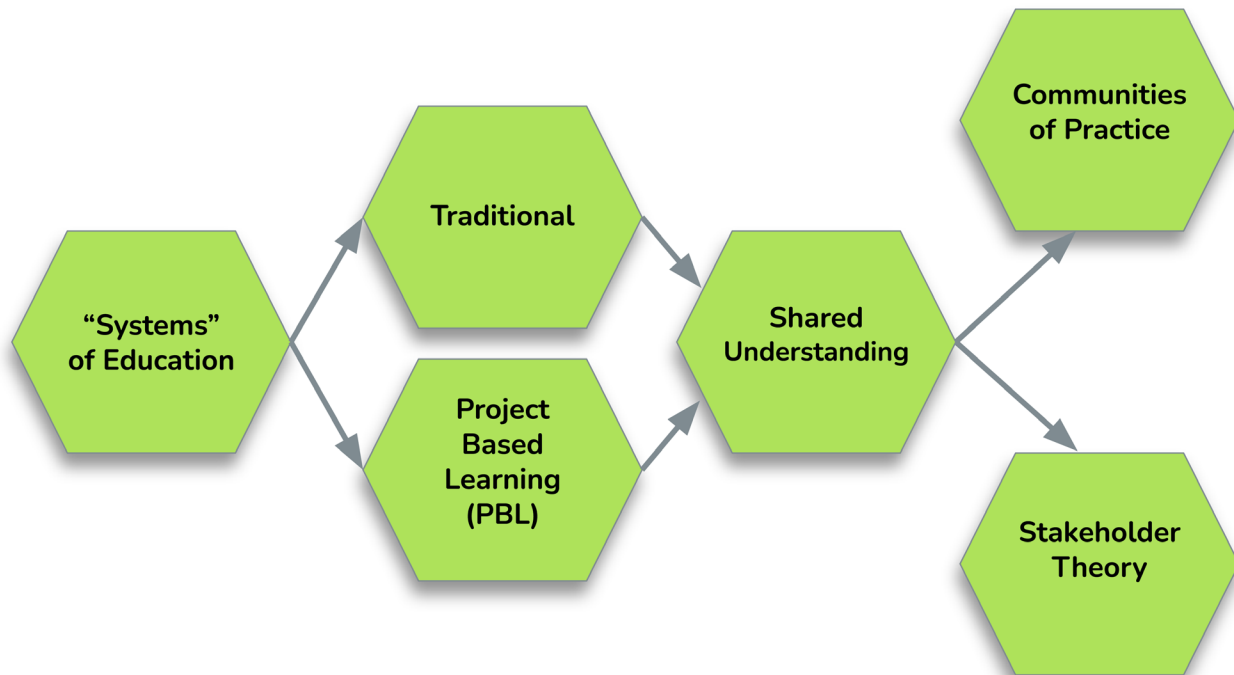
In order to more fully understand the challenges facing IowaBIG, we thought about the perspective of the students and the parents as they navigated these two different programs. We asked ourselves how the students are experiencing the two different learning spaces. Additionally, because it is such a departure from what parents likely experienced in their own schooling, whether they understand what their students were doing and learning at IowaBIG. We also questioned all the ways in which the participants and these programs interacted with one another and any potential misunderstandings or miscommunications that impact full participation and learning. This led

There seems to be an inconsistent understanding of what IowaBIG ‘is’ and how students will learn and be assessed throughout the program.

—IowaBIG Executive Director

us to research fields of systems thinking, project and problem-based learning versus traditional education, stakeholder theory, identity theory, and dual participation theories (Figure 6). In the literature review section, we discuss the portions of these theories frame our thinking about the problem of practice.

Figure 6: Map of Research Topics



LITERATURE REVIEW

SCHOOLS AS SYSTEMS

After mapping IowaBIG's stakeholders, it became clear that students and parents are caught between two very different school systems (Figure 5). On one side there is IowaBIG with community partners, teachers, and the school director approaching the work of learning in an innovative new way. On the other side is the mothership and the teachers, counselors, and principals who approach learning in a more traditional way. The students and the parents must simultaneously navigate the two systems. Because of this, it is valuable to consider schools as systems.

A system, according to Senge (2006) and Suter, et al. (2013) is a set of elements or parts, independent but interrelated with one another, that functions together as a whole to accomplish a common goal or purpose. Schools have been classified as systems because their common features meet this definition as well as criteria put forth by Scott (2008, as cited in Lunenburg, 2010). According to these criteria, schools are systems because they consist of five basic elements: inputs or resources, a transformation process, outputs or goals, feedback, and the environment or context for the system (Lunenburg, 2010; Wallace, 2009). Systems theory also provides a framework for evaluating how organizations are integrated, how they transition through change, how their macro- and micro- levels interact and relate to each other, and how the organization and its parts function separated, together, and within a larger environmental context (Suter et al., 2013; Ellaway et al., 2017).

Following these definitions, schools represent a complex array of systems. These range from the financial inputs to the learning processes and evaluation practices and are driven by the social, political, and economic factors coming from national, state, and local levels (Lunenburg, 2010). On the national level, the US Department of Education stipulates various rules and policies, such as No Child Left Behind (NCLB) and Race to the Top (RTT), that states and local districts must adhere to. States then mandate their own requirements and rules, and local districts adopt their own policies that piggyback off both the national and state requirements.

Every stakeholder at an individual school is impacted by each of these interplaying systems as well as those within the school the student attends. As a part of the educational reform that has taken place over the past three decades, local districts and schools have established their own systems of teaching and learning, ranging from traditional to highly innovative student-centered models. IowaBIG is one of those reform programs that was adopted to promote student-centered learning. IowaBIG also happens to be embedded within the traditional settings of the Cedar Rapids and College Community school districts, with students participating in both types of systems each day. This structural design creates interconnected and possibly dueling systems for participants and parents.

Realizing that IowaBIG participants are experiencing two very different school systems, we started by researching literature on the two different types of educational approaches. As we worked through that research, we realized that there might be challenges for the stakeholders who are navigating different parts of the two different systems. We asked the question, how is it that these stakeholders might start to develop a shared understanding of the different systems they were navigating? The research on shared understanding naturally led us to research on communities of practice and research on how stakeholders experience systems. The remainder of the literature review summarizes

how the literature framed our thinking in relation to IowaBIG and their problem of practice.

TRADITIONAL AND COMPETENCY-BASED SCHOOL SYSTEMS

To more fully understand the push and pull that students and parents are experiencing, we need to have a clear idea of the complex dynamic between the two systems. The two approaches to learning are very different and it is important to understand where the ideas of learning came from so that we can know how IowaBIG got to this place. Since 1906, traditional systems of education measured the amount of student learning with the “Carnegie Unit”. These units of learning were based entirely on the amount of time spent in each course or at each level/grade and were used to count student credits for both secondary and post-secondary experiences (Sullivan et al., 2015). Familiar to most adults who matriculated through schools in the last century, high school units are primarily determined by the number of contact hours with a teacher and are typically comprised of 50-minute classes, and 180 school-day calendars. Familiar practices also include instructor-led lessons, age-based groupings, use of standardized assessments, and credit earned for grades greater than a 65% or a D- (Sullivan et al., 2015 and O’Sullivan et al., 2014).

Grading and evaluation in a traditional system is based on an academic framework where recall and basic comprehension of knowledge, processes, and sequences are used to evaluate student achievement (O’Sullivan et al., 2014). Within a given class, students advance together as they learn the material at the same pace. In most cases, the teacher presents the material like a sage on a stage, students complete work with it for a period of time and then complete an exam to assess mastery of the information (King, 1993; Morrison, 2014; Koch, 2020). If they score at least 65% of the points, they advance through the curriculum as they earn their “units” of credit. Individual states determine how many Carnegie Units are required for a student to graduate from high school. In the high school and college setting, if a student does not pass a class, they are required to repeat it. When repeating a class, the student will repeat all course material until that class is passed. Students continue in school to accumulate enough credits to graduate.

Since the 1958 passage of the National Defense Education Act, a variety of social, economic, and technological shifts have influenced the way educational policy makers think about academic crediting (Hodge, 2007; Le et al., 2014). Hodge follows the flow of money into research in the field of educational psychology which ushered in new understandings about the nature of learning (2007). These were first used by the U.S. military

to design efficient training programs for military personnel. Around the same time, the work of W. Edwards Deming in the field of systems thinking introduced the concept of task analysis. These were the beginnings of new practices around educational policy in the United States. Innovative educators started thinking about ways to use this new understanding of learning to help accelerate learners who were ready to move on ahead of their peers.



The increasing demand for accountability of schools, personalization of everything in the American culture, and technological developments of the last decade accelerated the demand to move away from age-based advancement through school systems (Hodge, 2007; Le et al., 2014). A variety of models emerged - mixed-level classrooms, open concept classrooms, standards-based assessment, competency-based assessment, authentic learning, project-based learning, 21st Century skills learning, and online learning are among the more well known. IowaBIG uses practices from competency-based education (CBE) and project-based learning (PBL) as the basis for their innovation. These are the foci of the system we are studying.

CBE has been collectively defined as a teaching and learning system that measures whether a student performing a specific task possesses the skills, knowledge, attitude, and behaviors necessary for the effective performance and completion of the given task (O'Sullivan et al., 2014). According to Sullivan and Downey (2015), CBE represents a model that promotes authentic teaching and learning, along with application of knowledge and skills that align with 21st century skills considered to be important for success in the workplace. Clear and evidence-based learning outcomes, in content and skill, must be demonstrated by students to obtain mastery status and advance to new levels of learning (O'Sullivan et al., 2014; Freeland, 2014). CBE programs are structured around meeting specific competencies rather than meeting designated time and seat requirements (O'Sullivan et al., 2014; Freeland, 2014). This design of learning experiences can also be found in the literature as performance-based, mastery-based, proficiency-based, individualized learning, blended learning, or outcome-based learning (Boone, 2014; Le et al., 2014; Sullivan et al., 2015; O'Sullivan et al., 2014).

The US Department of Education provided states and K-12 school districts with a policy framework for CBE in 2014 (Worthen et al., 2014). States Departments of Education are also clearing a pathway for these new ways of approaching learning. As of 2014, forty-two states offered independent school districts options for determining credits that are not tied

to the seat time-based Carnegie Units (Carnegie Foundation, 2014). Iowa began opening pathways for alternative crediting in 2011 in response to home schooling lobbyists (Section 256.7, subsection 26, paragraph a, Code 2011). As with all of the educational reform movements before, the multiple layers of systems that schools inhabit make true reform challenging (Wallace, 2009).

The use of Carnegie units to measure learning is entrenched deeply in what most Americans understand expect classwork and grading to look like. CBE practices, although evolving for nearly four decades, are still very new (Steele et al., 2014). Most adults in the school system, including parents, teachers, counselors, and administrators, are not primed to think of alternative assessment practices as real school (Franklin et al., 2016). These adults are key stakeholders in the school system and how they perceive school could very well impact the success of innovation efforts.

PROJECT-BASED AND PROBLEM-BASED LEARNING PROGRAMS

Project-based and problem-based learning are similar approaches to teaching and learning. Different from lecture-based learning, students work to solve problems or do hands-on practice of the skills they are learning. DeGraaff and Kolmos track this approach to learning as far back as the time of Confucius (2007). Experiential learning has had champions on and off throughout time including Socrates and Montessori. The roots of what we currently call PBL emerged in the 1960's as medical schools looked to have students learn by doing (DeGraaff & Kolmos, 2007).

Contemporary project-based learning is one of six problem-based instructional models (PBL) that involves active learning, solving authentic, real-life problems, working in collaborative teams, and synthesizing creative products (Hung, 2011; Boss, 2015; Juliani, 2018; Handrianto et al., 2018). PBL may incorporate either a content-first or anchored instruction approach to complete specific content-based projects or open-ended projects (Hung, 2011; Juliani, 2018). Problem-based models (Figure 6) can be categorized according to the level of student

self-directedness and problem structuredness (Hung, 2011; Juliani, 2018). Low levels of self-directedness are primarily instructor designed and led. This compares to high levels of self-directedness where students lead the entire process. Projects can be measured by how structured a problem that students work on. This can range from completely structured to a full problem simulation that has no structure at all. The effectiveness of PBL is most often measured by outcomes, such as content knowledge acquisition, problem solving skills, collaboration skills, and product quality (Hung, 2011; Cooper et al., 2016)

The project-based model falls in the middle, with “partial” levels of self-directedness and project structuredness (Figure 7). Other key aspects of project-based learning include: (Hung, 2011)

- learning initiated by lecture or students possess basic content knowledge before engaging in the project
- project activities comprise the major portion of the course
- content-knowledge acquisition is largely received from the instructor before or during the problem-solving process
- involves medium to highly ill-structured problems

Project-based programs are being used in many educational settings to transform schools to 21st Century “cultures of thinking” (Ritchhart, 2015). IowaBIG focuses on the Universal Constructs and requires students to select a team-based outbound project option, which partners then a community partner or organization, and an independent inbound project based on their own personal interests. PBL has been shown to be effective in guiding students in the acquisition of content knowledge, domain-specific knowledge and skills, problem-solving skills, cooperation and social skills, and adaptive application skills (Hung, 2011). Most research on PBL has focused on the end-products of the project work and results of that research has been inconsistent (Hung, 2011).

According to the Buck Institute (2019) and PBLworks (Juliani, 2018), “Gold Standard PBL” is based on fundamental components for both design and teaching practices (Figure 8). Among the major components that make PBL most effective for student learning are:

- Problem-driven learning with relevant and authentic, real-world challenges
- Instructors who actively model the problem solving and reasoning processes
- Planning connections to standards using

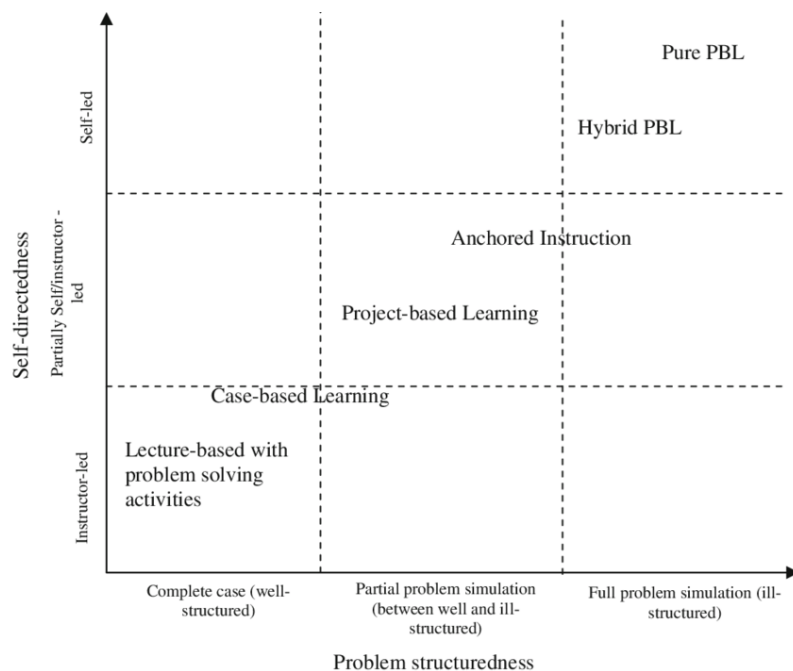
research, reading, writing, designing, prototyping, and creating

• Students’ application, integration, and reflection of content and skills standards across the relevant project context

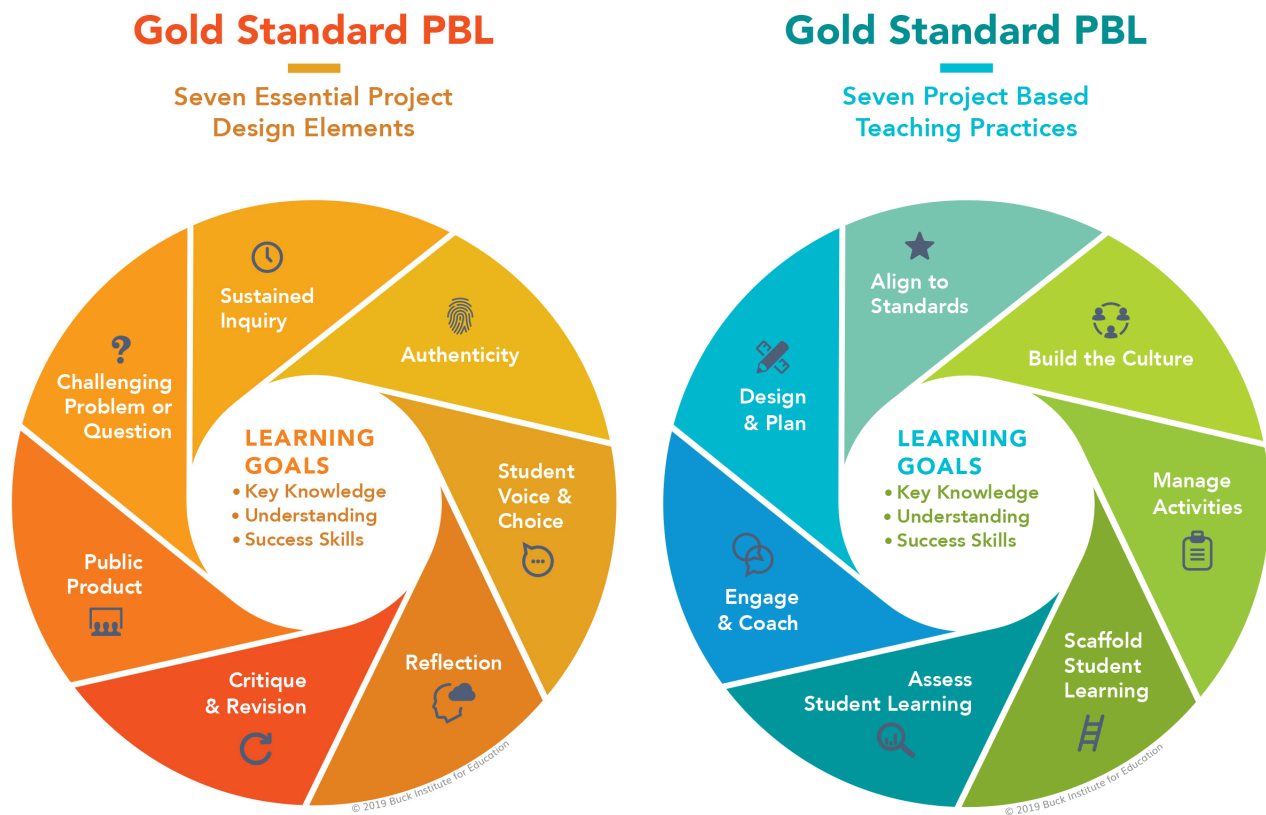
• Documentation of the process to provide accountability and structure for ongoing assessment and evaluation

• Emphasis on the social aspects of learning through team collaboration and group discussion

Figure 7: Six representative PBL models in Barrows’ PBL taxonomy (Hung, 2011)



Note. Project-based learning falls in the middle of problem structuredness and self-directedness.

Figure 8: Gold Standard PBL – Design Elements and Teacher Practices (www.PBLWorks.org, 2022)

Research on the implementation of project-based learning models is limited due to the variability of the contexts and the uncontrolled factors that are embedded into open-ended projects and problems (Hung, 2011; Handrianto et al., 2019). Few studies have focused on the implementation of the process and the underlying variables, including the components of the program, the uncontrolled variables and structure of the project, and the interactions between participants (Harden and Davis, 1998 as reported in Hung, 2011). Team and group interactions are dynamic throughout the course of a project, making it difficult to quantify and compare across investigations (Handrianto et al., 2019). Valid and reliable comparisons across PBL models must consider differences between student populations, teacher experience and preparation, curriculum standards, types of tasks and projects, access to equipment and materials, and communication supports (Handrianto et al., 2019). Although perfect comparison is impossible, the 7 Design Elements and 7 Teacher Practices remain consistent.

UNDERSTANDING STAKEHOLDERS

Anyone with interests that impact or are impacted by the activities of an organization or system are considered stakeholders (Freeman,

2010). Freeman, the pioneer of stakeholder theory, notes that there are two primary types of stakeholders: primary and secondary. Primary are those that are closely coupled with the organization and have a direct impact on and benefit from the activities of the organization (Freeman, 2010). Secondary are those that are related to the organization through a network connection to a direct stakeholder (Freeman, 2010). Many researchers have expounded on Freeman's work over the last several decades. Ford et al., (2009), contribute to the theory by defining stakeholders as supportive, conflicting, and neutral. They noted that through their interactions, or lack of interactions, with the organization, stakeholders can be converted from one category to another. Of particular concern are neutral stakeholders who can become adversarial (Ford et al., 2009).

Mitchell, et al. (1997) consolidate several theories analyzing the typology of stakeholders in a way that is useful. In their stakeholder salience theory, they assert that the relationship between stakeholders and an organization is not static. Rather, the interplay of three key attributes in the relationship between an organization and a stakeholder: power, legitimacy, and urgency. The interplay of these three attributes can influence how a stakeholder perceives their role

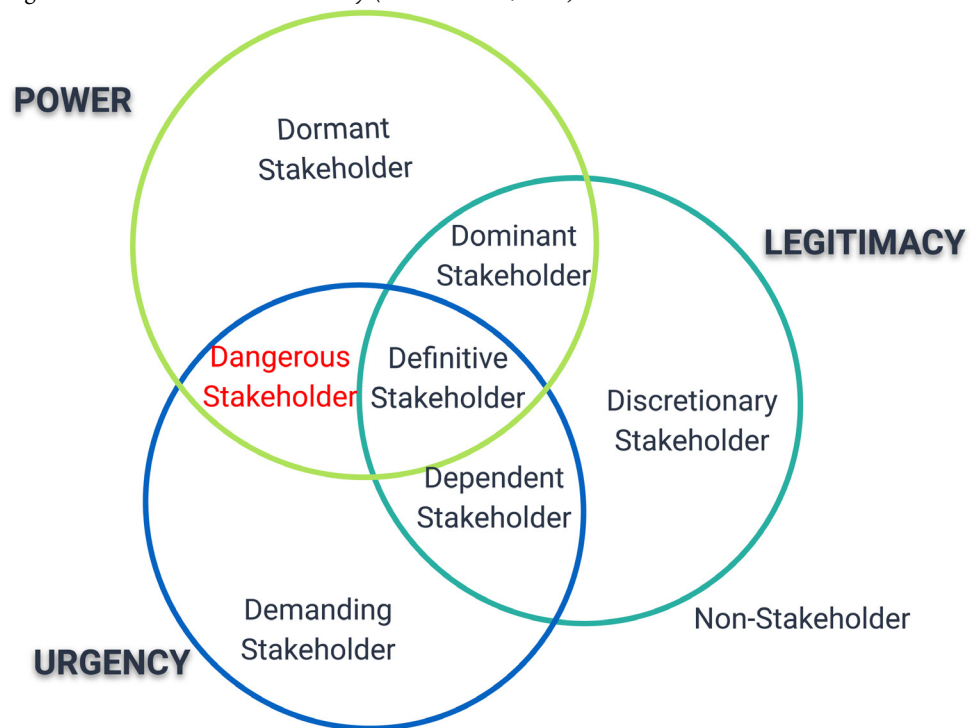
Figure 9: Stakeholder Salience Theory (Mitchell et al., 1997)

and flavor the way that they interact with the organization. In their framework, a stakeholder has power when they have the capacity to influence the work of the organization - for good or bad. Legitimacy comes when the stakeholder has a claim of some sort with the organization (share contracts, legal or moral relationships, an exchange of critical resources, etc.). Urgency is how quickly a stakeholder's needs must be attended to (time-sensitive demands, or critically important demands).

The interplay of the attributes can change the nature of the relationship of the stakeholder (Figure 9). Stakeholders who have all three attributes are 'definitive' stakeholders. There is no question about their relationship with the organization. Stakeholders with only legitimacy and urgency are wholly dependent on those with power and are thus 'dependent' stakeholders. Stakeholders who claim urgency and have some power but are not afforded legitimacy are categorized as 'dangerous.' These stakeholders can go to extreme measures in protest of that lack of legitimacy including sabotage and coercion (Mitchell et al., 1997). In this theory, the authors make it clear that most stakeholders are not aware of their positioning in this framework. For organizational leaders, the question turns to what are the mechanisms for managing stakeholders so they do not become a liability?

HOW STAKEHOLDERS LEARN THEIR ROLE

Our understanding of how stakeholders interact with systems is informed by situative theories of learning. In this theory, learning processes are viewed as an interaction between the individual, the community, and the context



Note. The diagram shows the distinct categories of stakeholders and the interplay of power, legitimacy, and urgency.

(Hand & Gresalfi, 2015). In their research, Hand and Gresalfi focus on how learners interact with their educational environments. For our study, we are broadening the understanding of what it means to be a learner to all stakeholders in the educational settings we are studying. Each stakeholder (students, parents, teachers, administrators, counselors, community partners, etc.) is truly a learner as they figure out how to navigate two very different systems of instruction.

Situative theorists have found that learners develop their understanding of themselves through an interplay of "practices, roles, and expectations" (Hand & Gresalfi, 2015, p. 194). As learners interact with the learning resources provided by an organization, they develop a sense of oneself in relation to those resources. How they develop this identity is limited by the opportunities to interact, by the information they have access to, and by the context of the learning. Learners' identities in those various situations emerge from how they "make sense of oneself in relation to those activities" (Hand & Gresalfi, 2015 p. 191). How one makes sense of oneself, and the activity is dependent on with what or whom they are interacting. Resources for this interaction include either informational or interpersonal. Informational resources are those

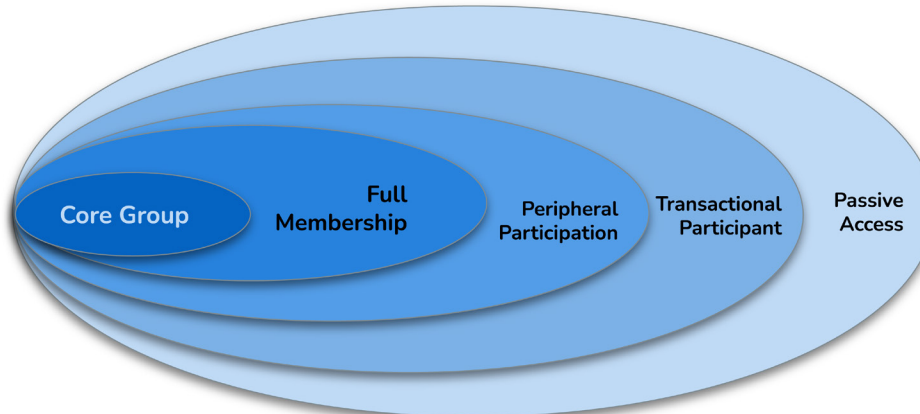
products used to interact with the community. These can include communiques, web sites, presentations, etc. Interpersonal resources are related to actual participation and how the individual is framed within their participation with the group (Hand & Gresalfi, 2015).

STAKEHOLDER LEARNING AND SHARED UNDERSTANDING

Information that stakeholders have access to impacts the way they interact (Hand & Gresalfi, 2015). To make full participants of stakeholders, they need access to information, and that information needs to be understood in a shared understanding (Aubé, et al., 2015). Shared understanding is often referred to as the extent to which participants, stakeholders, and team members believe they agree with one another concerning the goals and priorities to be pursued, the work to be accomplished in pursuit of the goals, and the roles and expectations of themselves and others members (Aubé et al., 2015; Mulder et al., 2002; Bittner et al., 2013). Shared understanding is based on “the overlap of understanding and concepts among group members” (Mulder et al., 2002), which includes a mutual understanding of meanings and terms, mental models, and information.

The quality of interaction between members of a group or team is highly dependent on this shared understanding, which contributes to mutual knowledge, beliefs, and assumptions (Mulder, et al., 2002). Organizations need stakeholders

Figure 10: Levels of Participation in a community of practice according to Wenger (Karalis, 2010)



to understand their purpose in order to maintain legitimacy and engagement (Suchman, 1995). Management recommendations often suggest spending more time with all types

of stakeholders, as well as ensuring vital information is communicated to build stronger relationships based on understanding (Ford, 2009). Nasir and Hand (2008) point out that stakeholders that had limited access or marginal roles were likely to be less engaged. According to research by Aubé et al. (2015), Bittner et al. (2014), and Fullan (2010), a lack of shared understanding or collective capacity in a system affects numerous facets of groups, teams, or organizations, including work methods, motivation, goal success, efficiency, trust, and communication. Shared understanding among members and stakeholders has been shown to improve the quality of groups collaborative experiences and interpersonal relationships, leading to improved performance (Aubé, et al., 2015; Mulder et al., 2002; and Bittner et al., 2014).

COMMUNITIES OF LEARNING AND SHARED PARTICIPATION

Lave and Wenger’s work with situative learning and communities of practice provides a convenient framework that demonstrates how merely sharing an understanding of the work does not build a community of cooperative stakeholders (1999). To be a community of practice, a group of people must share a “common interest in a domain of human endeavor” (Karalis, 2010, p. 17). Wenger (1998) identifies three dimensions that unify a community of practice:

- Shared interest in some goal
- Binding relationships
- Shared understanding of resources

Members of a community can have different orientations, and thus, different levels of participation with the group. Depending on where they are situated, they learn and experience

different things. In Figure 10, Karalis maps out the orientations defined by Lave and Wenger. Typically, new members gradually move from the outer circles of peripheral participation

to becoming a key member with the most experience. While a community of practice interacts, no matter what the orientation, the interaction of members impacts the learning of the entire group. Those with transactional and passive relationships are more incidental and have very little influence on the community (Karalis, 2010)

Wenger (1998) further asserts that organizations can intentionally create structures and practices that help to nurture the increased participation of some members of the community. Purposeful attention can sometimes be necessary to legitimize membership and participation in a

community of practice. Legitimization can be achieved through activities that:

- Recognize they are part of the community of practice
- Finding ways for members to participate
- Shining light on the value brought to the community by a member

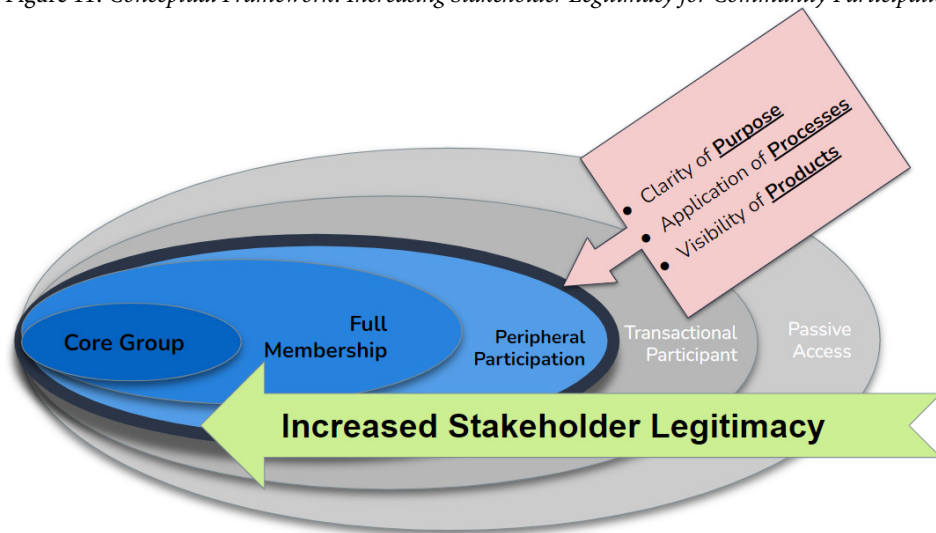
It is important that all members of the community have the resources they need and that any “barriers to participation” are eliminated (Wenger, 1998, p. 9).



CONCEPTUAL FRAMEWORK

The problem of practice facing our partner is that there is an inconsistent understanding among different participant groups of the what, the why, and the how of their work with students. Legitimacy is defined as having some binding relationship between stakeholder and the organization (Mitchell, 1997). Preliminary evidence suggested that IowaBIG might have a blind spot where some of these stakeholders are concerned. Unknowingly, some of the stakeholders appear to be lacking legitimacy. When denied legitimacy, it is as if the stakeholder is not fully acknowledged as necessary to the work of the organization. They are not allowed to be a full participant in the community of practice. We developed a conceptual framework (Figure 11) that is an intersection of two theories that address these issues: stakeholder salience theory and communities of practice.

Figure 11: *Conceptual Framework: Increasing Stakeholder Legitimacy for Community Participation*



Stakeholder salience theory provides the framework for understanding legitimacy in stakeholder relationships. In this context, legitimacy is the acknowledgement that you matter somehow to the organization. Stakeholders must have access to some level of legitimacy to become a member of the community of practice (Mitchell et al., 1997). A stakeholder who has limited access to knowledge about the purpose and activities of the organization cannot feel as though they are truly a part of the community. When said stakeholder is used for some necessary function of the organization (such as a counselor who is needed to help register students for academic programming), they remain a transactional participant.

In order to help transactional stakeholders feel more a part of the organization and bring them into peripheral participation, they need access to an understanding of three key operational functions of the organization (Wenger, 1998):

- They need a clear understanding of the purpose behind the work of the organization.
- They need to understand the processes of the organization at least for those activities that impact the stakeholder.
- They need to be able to see the products produced by the partnership.

These three operational functions will signal to the transactional and passive stakeholder that they are a part of something real, that they matter to the organization, and, thus, increase their sense of legitimacy.



After interviewing the executive director, reading the prior program evaluation, surveying publicly available resources, and considering the literature, we decided to ask three questions to help us identify causes of the problem of practice. These questions were designed to help us understand if the initial reports and findings were more universally true, to discover what, if anything, was preventing stakeholders from full participation in the work of IowaBIG. Finally, to make recommendations for effectual shifts, we developed the following research questions:

- What do they believe to be the differences between IowaBIG and traditional school experience?
- How do stakeholders experience IowaBIG?
- How does stakeholder experience with IowaBIG align with exemplary PBL programs?



RESEARCH QUESTIONS



PROJECT DESIGN

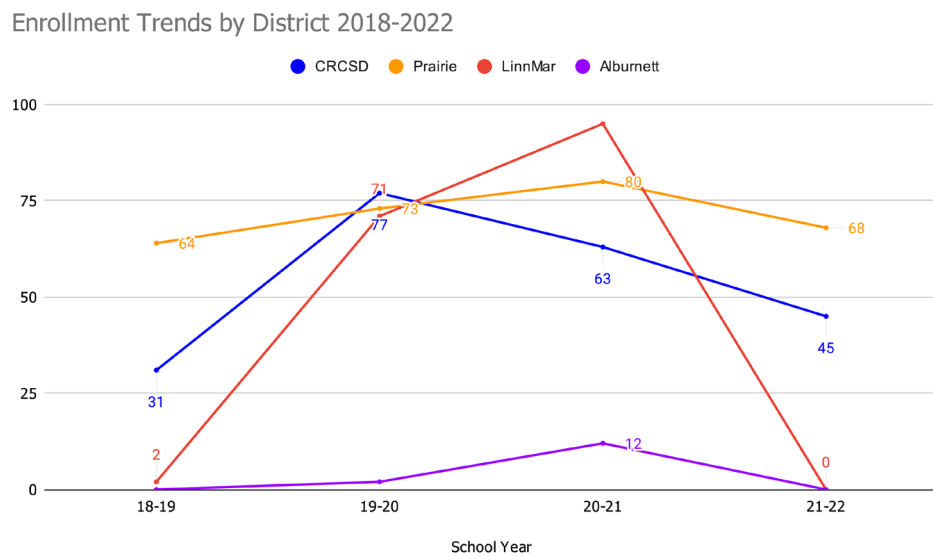
METHODOLOGY

In order to address the problem of practice and answer our research questions, we planned a descriptive mixed methods approach to obtain quantitative and qualitative data. We charted the sequence of the critical activities at IowaBIG (Appendix A) following the protocol outlined by Rossi, et al. (2018) for assessing processes, practices, and accessibility. This sequence of activities helped us to understand the stakeholder experience by identifying access points for different stakeholders, key structures and processes to investigate, and possible documents to gather.

PARTICIPANTS

Our study focused on stakeholder participants: students, parents, and guidance counselors from four high schools that contract with IowaBIG. Because one large school district was projected to break ties with IowaBIG, we were given access to the Cedar Rapids High Schools (Jefferson, Kennedy, and Washington), as well as Prairie High School in the more rural College Community School District near Cedar Rapids. These four

Figure 12: IowaBIG Enrollment Trends by District 2018-2022



high schools account for 129 students, or 61% of the total IowaBIG participants during the 2020-21 school year. In Figure 12, you can see the increasing popularity of the program over the years. Our partner gave us access to students from Cedar Rapids Community School District and Prairie. The selection of these high schools allows for an in-depth single-district analysis, with a possible urban/rural comparison. The two districts also represent a broad cross-section of student interest and participation, both with waning participation numbers.

Student and parent participation was voluntary for all surveys and interviews. Student surveys were created through Qualtrics and facilitated through IowaBIG on a single day. We were not provided with student emails for any follow-up requests. IowaBIG did provide parent emails for all the participating students. Parent surveys were sent out through Qualtrics, with two follow-up email reminders to attract more participation. Interviews with students and parents were scheduled through voluntary sign-ups on Sign-up Genius. Recruitment emails were also sent directly to parent volunteers after the sign-up window closed. Guidance counselor interviews were scheduled directly through contact with them after being recommended by their department chairs.

Figure 13: Parent and Student Survey Response Breakdown

	Incomplete	Complete	Total Respondents	Completion Rate
Cedar Rapids Schools Students	14	5	29	52%
Prairie High School Students		10		
Cedar Rapids Schools Parents	11	8	24	54%
Prairie High School Parents		5		

Between the two school districts, we received 29 responses from students and 24 responses from parents. Survey responses where respondents answered less than 40% of the questions were deemed incomplete. Surveys that had 95% or more of the questions answered were considered complete. Fifty-two percent of students and 54% of parents completed the survey (Figure 13). Figure 14 notes the number of interviews we were able to complete. We had representation from all stakeholders in both districts with the exception of one parent from CRCSD. Multiple efforts

electronic copies of IowaBIG registration forms, the 2019 student guidebook, the 2021-22 student and teacher playbooks, the AGILE course syllabi, and a draft of their assessment plan from February 2021. IowaBIG program information was also accessible through multiple internet platforms and websites. These documents and materials provided a basic understanding of the

Figure 14: Interview Participants

	Student	Parent	Counselor
Cedar Rapids Schools	1	0	1
Prairie High School	1	1	1

to interview a parent from this group were unsuccessful.

INSTRUMENTS, DOCUMENTS, AND DATA COLLECTIONS

IowaBIG provided us with their Springpoint Grant Evaluation (Feldman et al., 2019), which was conducted as a follow-up to receiving an XQ Grant award. We used this evaluation to familiarize ourselves with some of the processes and practices that occurred at IowaBIG. We identified observations and areas of emphasis that coincided with our problem of practice, the critical activities at IowaBIG, and our research questions.

The executive director provided background information and documents that furthered our understanding of the program. We were provided

program model. All program documents were coded using the same process as the interview and qualitative survey data.

IowaBIG designed and administered their own “Senior Exit Survey” for

all graduating student participants during May 2021. This survey was conducted by the Executive Director. It asked graduating students to rate their overall experience and provide open-ended commentary about strengths, weaknesses, challenges, and benefits of the program. We were given access to the raw data collected from both the NewBo and Blairs Ferry sites.

Based on these background findings, we worked with the director of IowaBIG to create a series of survey questions for current students and parents that aimed to deepen our knowledge of how each group experienced the program compared to their typical traditional school participation. Our surveys had both close-ended Likert items and open-ended questions. Each survey was divided into sections devoted to acquiring data about student learning, communication practices, navigating the two systems, evaluating

their overall experiences, and basic background information (Appendix B). Close-ended questions consistently used a 5-level Likert scale ranging from “Strongly Agree” to “Strongly Disagree” (Figure 15).

Semi-structured interviews were scheduled and conducted based on voluntary responses from the student and parent surveys. Guidance counselor interviews were scheduled and conducted based on responses to an email request. We created interview questions based on our research themes to supplement survey information and provide a broader view of participation and stakeholder legitimacy across IowaBIG (Appendix C). We grouped our series of questions into specific “buckets” that allowed for efficient coding and comparison across interviewees and stakeholder groups (Figure 16).

Interview protocols were designed to introduce participants to our project and obtain permission

Figure 15: 5-Level Likert scale used for Student and Parent Surveys

I can explain the purpose of the IowaBIG experience to a friend.

Strongly Agree

Agree

Neither Agree or Disagree

Disagree

Strongly Disagree

Note. Scales were converted to 1-5 rankings in Excel, with “Strongly Agree” as 5 and “Strongly Disagree” as 1.

to record their responses for transcription. Interviews were conducted and recorded through ZOOM, which also produced our initial transcripts. Interview recordings and transcripts were compared and updated for accuracy.

Figure 16: Interview Questions Based on Research Question Themes

Interview Question Examples based on Research Question Themes			
Stakeholder Group	Dual Participation	Onboarding	IowaBIG Participation
Student	<ul style="list-style-type: none"> When you talk about IowaBIG to your mothership peers, what are things that you have to explain? What are the challenges you’ve experienced being in both schools and how have you overcome them? 	<ul style="list-style-type: none"> What was your introduction to BIG like? If you could mentor a new IBG student, what hints would you provide to make it a successful experience for them? 	<ul style="list-style-type: none"> What challenges do you have ‘living’ in both grading systems? If you could design better progress checks, what would that look like? When do you get most frustrated at BIG? If you could mentor new BIG staff/teachers, what would you recommend?
Parent	<ul style="list-style-type: none"> What challenges do you see your student having by being in both schools? 	<ul style="list-style-type: none"> What was your introduction to BIG like? What was messy or missing that would have helped? If you could mentor new BIG parents, what hints would you provide? 	<ul style="list-style-type: none"> Tell us about the feedback you received from BIG about the work your student was doing. What do you view as the biggest benefit of participating in BIG? If you could design better progress reporting, what would that look like?
Counselor	<ul style="list-style-type: none"> What challenges have you experienced in helping students participate in IowaBIG? What has been ‘bumpy’ in completing your own work as it related to IowaBIG? 	<ul style="list-style-type: none"> Talk us through the process of how a student gets involved in BIG. What kind of orientation do counselors receive and what do you understand about the student orientation process? 	<ul style="list-style-type: none"> What do you share with potential students when they ask what IowaBIG will be like? What do you wish you knew about how students participate in IowaBIG? If you could choose one thing for IowaBIG to change that could help you do your job better, what would it be?



QUANTITATIVE METHODOLOGY

Close ended survey questions were placed at the beginning of each survey section. Descriptive analysis of close-ended survey items that use Likert scales was compiled and calculated using Qualtrics. We utilized frequency counts, means, medians, variation ranges, and standard deviations, as our main statistical evaluation for determining learning practice, navigation of systems, communication strategies, and overall satisfaction. We converted responses to background information questions to numerical codes in order to sort student and parent stakeholder responses by school district, number of years participating, types of grading updates, sharing of grade information, and whether students are planning to return to IowaBIG for the upcoming school year. We used this data to create a series of pivot tables, testing different relationships to identify distinct themes, patterns, or discrepant outcomes that signaled for a deeper evaluation during coding of the open-ended questions. These quantitative patterns and themes also helped focus the design of our structured interview sections and questions.

QUALITATIVE METHODOLOGY

Program documents, open-ended survey responses, and interview transcripts were analyzed first using descriptive and layered coding analysis protocols outlined by Loeb et al. (2017) and Saldana (2009). The descriptive coding process (Figure 17) funneled all the information into the key features of IowaBIG and clarified our understanding of how the program functions in real time and against traditional systems of instruction and exemplary project-based learning. We looked at institutional and online materials as proxy data and indirect measures of how IowaBIG functioned and what stakeholders said about the program.

Open-ended stakeholder responses and documents were evaluated using a layered team process that included initial coding techniques of structural coding by research question, process coding to identify routines, and in vivo coding to capture important stakeholder beliefs or behaviors. This type of analysis recognizes the importance of context in the verbal language used during the conversation, in addition to the purpose and individual words chosen (Bloome, et al., 2006). We compared our independent coding outcomes to achieve intercoder agreement and convergence on our initial categories, subcategories, and themes (Figure 18).

DATA ANALYSIS

Figure 17: *Descriptive Analysis Protocols (Loeb et al., 2017)*

Steps in a Descriptive Analysis

An Iterative Process

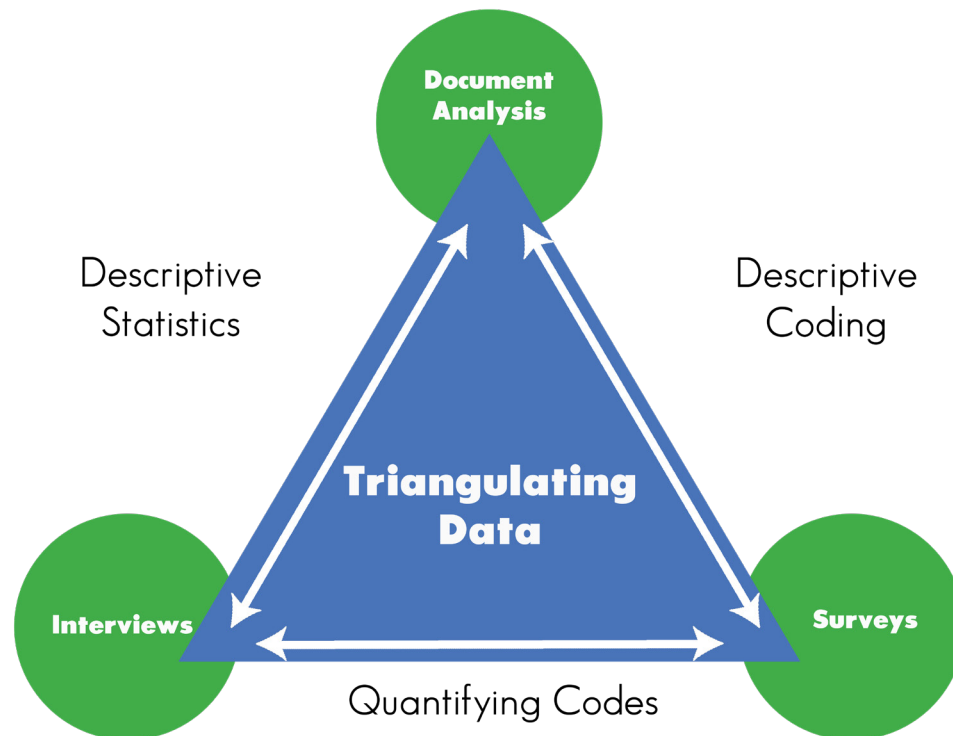
- Step 1: Identify a phenomenon
- Step 2: Consider which features of the phenomenon are most salient.
- Step 3: Identify the constructs (measures) that best represent these features.
- Step 4: Determine whether there are observable patterns in the data.
- Step 5: Communicate the patterns in the data that describe the realities of the phenomenon.
- Step 6: Rethink and repeat as needed.

Figure 18: *Primary and Secondary Coding Outcomes*

RQ#1 Understanding of IowaBIG work	RQ#2 Stakeholder's IowaBIG experience	RQ #3 IowaBIG vs Exemplar PBL
<ul style="list-style-type: none"> • Purpose, Mission, Vision, culture • Teacher/Student Roles • Type of Work 	<ul style="list-style-type: none"> • Daily Routines & expectations • Evaluation • Challenges & Struggles • Pre-enrollment information & basic "BIG" information • Communication • Benefits 	<ul style="list-style-type: none"> • Design Practices • Teacher Practices

Secondary coding involved several processes to further evaluate the data for explanatory narratives, comparability, and transferability. Versus coding, focused on the perceptions, policies, and practices at IowaBIG was completed and allowed for comparison between IowaBIG and traditional learning systems, as well as against exemplar PBL design components and teaching practices. We reached decisions on coding through a team process that allowed for consensus and consistent application in assigning themes.

To analyze our results and generate findings, we undertook a triangulation process that combined and corroborated information from our three sources: surveys, interviews, and documents (Figure 19). We worked independently and then collaboratively to arrive at consistent results and thus credible findings. This was an intensive iterative process that allowed us to draw out the major results and identify priority areas where improvements could be recommended.

Figure 19: *Triangulation of Survey, Interview, and Document Data*

Like our research questions, we are aligning our analysis, findings, and recommendations around the three strategies for increasing stakeholder legitimacy: clarity of purpose, application of processes, and visibility of products (Wenger, 1998). Legitimization of participation is a key facet to establishing and maintaining inclusive communities of practice. Organizations can adopt practices that build a strong community of practice and legitimize stakeholders. This is developed by achieving a shared meaning of the what, the why, and the how of the community (Wenger, 1998).

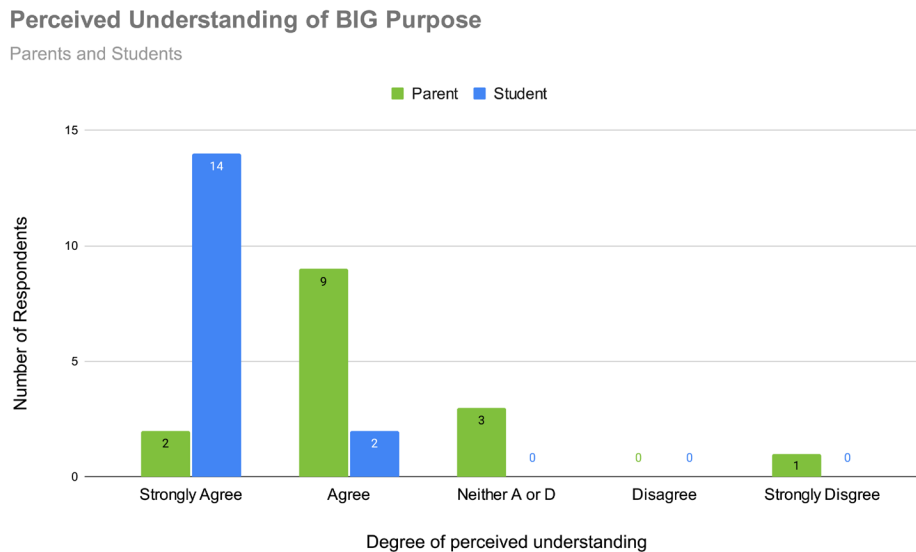
Research Question 1 – What do stakeholders understand to be the work of IowaBIG? (Clarity of Purpose)

One key operational function in moving stakeholders and participants to more legitimate levels of participation is a clear and consistent purpose (Wenger, 1998). Stakeholder legitimacy is achieved when a stakeholder feels they matter to the organization (Mitchell et al., 1997). If they do not have access to information as critical as the organizational purpose, there is no way they can feel a part of the community. The purpose is the why of the work and a key entry point to any member of community.

Finding #1-1 - There is a lack of convergence in understanding the vision and purpose of IowaBIG

Parents and students have a high level of confidence that they know and understand the purpose of IowaBIG. When asked in our survey, “Do you understand the purpose of IowaBIG?” 100% of students and 73% of parents were confident in their knowledge of IowaBIG’s purpose (Figure 20).

Figure 20: Student and Parent Survey Responses to “I understand the purpose of IowaBIG.”



Although most participants reported understanding the purpose of BIG, our analysis of stakeholder descriptions of the purpose indicates a wide variation from what that purpose actually is. Qualitative analysis shows that stakeholders do not have a single clear understanding of the purpose of the work at IowaBIG. We asked students and parents to define that purpose in open-ended questions and the responses were quite varied. We used secondary coding to get a sense of how students felt about the purpose they identified (Figure 21). We found that while ninety-seven percent of the purpose data collected were positive only one student actually named the purpose as identified by IowaBIG: “unleash human potential.”

RESULTS & FINDINGS

just outside of that community. If the stakeholder does not understand how the processes of the organization are applied, it is challenging for them to know how to participate. This might cause them to harbor feelings that they do not matter to the community and decrease their legitimacy as a stakeholder. Continued deprivation of legitimacy can make a stakeholder become dangerous to the organization (Mitchell et al., 1997). To investigate how the processes of IowaBIG are impacting stakeholders, we looked to define how they are experiencing the program.

Finding #2-1 Students who participate in IowaBIG love it!

When asked to rate their experience at BIG out of 10, seniors gave high ratings, with an average of 8.49. When prompted to provide a single word that describes BIG, 97% of senior responses were positive. Examples of the affection for BIG include words like engaging, fun, inspiring, challenging, innovative, empowering, creative, exciting, and diverse. Students recognize and appreciate the different learning experiences that IowaBIG provides. As one graduating senior wrote, BIG was “unexpected - [I] had no idea this would happen – no clue we’d do so many cool things.” Another senior reflected that BIG was “Awesome. Getting to choose what we work on, everyday it was something new.” Student responses that could not be coded as positive included words like, “mediocre,” “sad,” and “just ok”

This positive outlook is also supported by students reporting they identify more with BIG’s type of learning compared to their traditional mothership model. All 15 students who completed our survey reported they agreed or strongly agreed that they identify best with the learning approach offered by BIG. In comparison, only four of these same students reported they identified with the learning at their motherships, and eight students disagreed or strongly disagreed that traditional learning fit their identity.

Survey responses also showed that students and parents were highly supportive of IowaBIG and would recommend the program very strongly. 100% of student surveys, and 9 out of 13 parents reported they would recommend IowaBIG to others.

Finding #2-2 Students want more structure in their experiences at IowaBIG

We elicited suggestions for improvement by asking questions such as, “What challenges did you experience,” “Describe the time when you got most frustrated,” “What do you wish you had known?” and “What advice would you give yourself before walking in for your first day of BIG?” Our findings show an interesting duality in that while students really do love their experience at IowaBIG, some of the very qualities that they enjoy also bring them frustrations. In short, the program is just a little too loose and students desire a degree more accountability including deadlines for incremental project work and project completion.

Twenty-one percent of students responded in open-ended questions that they wanted more accountability for project teammates. They especially desired more stringent policies around attendance and work completion. Illustrative response from students:

“So I do wish there was a little bit more (mothership) style accountability like well if this isn’t in by this deadline, deadline, then you’re getting a zero or whatever, and whatever the BIG equivalent of that is I think sometimes there’s a little bit too much flexibility in student based learning.” (interview)

I knew it was a different learning experience, but, yeah, I had no clue what I was getting into.

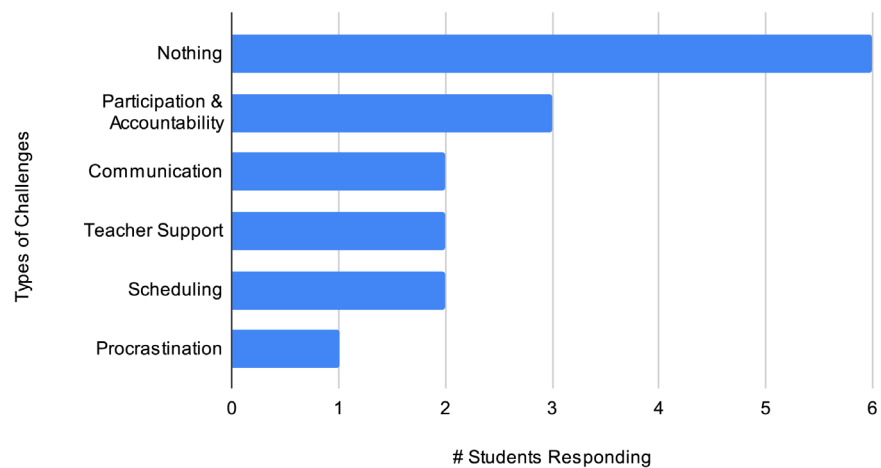
—Student Interview

“Too many kids taking advantage of this experience by slacking off, avoiding work, not caring about their projects, using it as free time. (BIG teachers) should monitor kids better – ‘what have you got done? Where are you at now?’” (sr exit)

“A bit more structured freedom – set times for those who can’t handle the freedom. More specificity to what a day looks like.” (sr exit)

Figure 22: Student Survey Responses to Question “What challenges need to be addressed to improve the IowaBIG experience?”

Challenges Identified by Students



We also asked “What challenges need to be addressed to improve the IowaBIG experience?” Thirty-seven percent of the respondents did not list anything. Coding of the other responses revealed that participation and accountability were key issues needing to be resolved (Figure 22). Some of the responses included:

- More consistent check-ins to make sure that all participants are doing their fair share
- More communication on seminars and scheduling assistance from the instructors
- Teacher support with the projects when they are not moving forward

Eight out of 14 of our survey respondents answered the question “I wish I would have known...” by stating that they desired a better understanding of the process of BIG. This shows that students need more explicit orientation on how to successfully participate in IowaBIG’s project-based learning. We found in our interviews that this confusion and resulting frustration was common. One student noted that “in just a year you don’t fully understand what you got yourself into.”

Both parents and students noted that they highly valued the independence and way that students could learn from failure. One student we interviewed did not successfully complete a project over the course of two years in the program. Even though she noted that she learned a great deal from those project ‘failures’, she suggested that more adult guidance would have helped her team find success. She described

her experience as “a bit too much ‘you try and figure it out’...sometimes it went too far before teachers intervened.” Another student said that they desired an “extra push in the right direction when we are messing up.”

During our conversations with the executive director in the spring of 2021, questions about the onboarding students led to the idea of introductory courses. BIG piloted a 3-week mini-course introduction in the fall of 2021 that was designed to be a soft introduction to the project selection process and the collaborative team mechanisms that students would be experiencing. In our interviews, this change emerged as a very positive one for a student who experienced BIG both before and after the adoption of the mini-project process. She noted “So this year, the teachers had us on, I believe, these three-week projects to get a practice run into what being on a project is like. And that was super helpful to have an already established structure and kind of pace, as well as like we’re expected to get things done quickly and we need to keep moving forward.” The students will benefit from continued efforts to orient students to the different approach to learning that IowaBIG offers.

Finding #2-3 – Parents & Counselors were transactional and/or passive access stakeholders

Keeping in mind that stakeholders who do not have the appropriate access to legitimacy can be dangerous to the efforts of the organization, it is important to pay attention to stakeholders who are outside the boundary of peripheral

participation. An organization must ask if they are fulfilling the three critical operational functions of purpose, process, and products that help to bring stakeholders into peripheral participation. Effective partnerships with stakeholders are built on effective communication practices that require collaboration from both sides, not simply one-sided interactions, and are important in building a shared sense of responsibility for student success (Gonzalez et al., 2018). If stakeholders feel they are missing any of these key functions, they are not fully legitimized in the way that they desire.

Parents

Our data indicate that parents have a clear understanding that the learning at IowaBIG is very different from the traditional mothership (Figure 23). That comes with a different way of communicating the learning. Initial interpretation of the survey data indicated to us that parents really did not mind the scant information they received from IowaBIG regarding grades. In our survey, only 15 percent of parents indicated that they received any student progress information from BIG during the semester. Despite this seemingly small number, 62% regarded the scant information they receive as sufficient. Even more surprising is the difference between the value placed on knowing about their student's progress in the two different learning environments. The average of the ratings from 1 (not at all valuable) to 5 (very valuable) was 4.38 for mothership classes and 2.46 for IowaBIG classes. In fact, not a single parent selected that they moderately or highly valued knowing about progress at IowaBIG. We wondered why the same parents who valued receiving grade updates from the mothership, did not place that same value on progress at BIG.

In our interviews, one parent shared that during the orientation meeting held at the beginning of the year, parents were

Figure 23: Parent Survey Analysis for Questions 3.1 - 3.6

	% receiving grade updates during semester	Regard amount information about progress as sufficient	Average rating of value in knowing about student progress (scale of 5)
Mothership	92%	77%	4.38
IowaBIG	15%	62%	2.46

told that they would not be receiving regular updates about progress. She remembers being told that “no news is good news.” Parents watch their children go into the experience and have no expectations of receiving updates. This is reflected in the survey data.

When we looked more deeply into the survey and interview data, we found that when asked for suggested improvements, 5 of the 6 who took the time to write an open-ended response noted that progress updates or parent conferences would be desirable. One parent noted that they really would be happy with any communication at all.

BIG is aware of the need to increase how valued parents feel. In the 2021-22 Teacher Playbook (Figure 24), they created a ‘minimum standard of

Figure 24: Excerpt from 2021-22 Teacher Playbook (page 11)

1. Valued

- a. Each parent will receive a copy of the Student playbook, the BIG calendar, and BIG contact information at the beginning of the school year
- b. An email to parents at the commencement of their full project - summarizing the work, providing contact information, etc.
- c. After retrospectives, the student team writes an email to parents discussing their work and progress - teacher sends. Every time remind parents that they can see the work by asking their son/daughter to show them their Sprocket page.
- d. Students who are struggling with BIG and/or are failing work at BIG, we are in contact with parents. (Please let Laura know so she can contact the counselor)
- e. Any parent who reaches out to any staff member will be responded to within a business day/24 hours and their issues, concerns, and/or questions addressed promptly.
- f. Parents should be notified any time their student does exemplary work in order to share wins.
- g. Parents will be personally invited to attend any significant or culminating event their student's team is having, as appropriate.

care' for staff to apply to parents. Here is the list of ways that they identified to show parents that they are valued.

Our data suggest that this minimum standard of care is not yet being realized. In our survey, we asked parents to identify challenges they experienced in their child's participation in the program. While some parents have accepted that grade updates will not be as frequent at BIG, survey responses suggested that BIG has not yet found the balance. Parents identified the following specific to communication:

- Lack of communications from BIG (contrary to minimum standards b, c, f, and g)
- Not understanding the progression of work (contrary to minimum standards b, c, and g)
- Not knowing about final projects (contrary to minimum standards c, and g)
- Lack of understanding what school day looks like (contrary to minimum standard a)

In an interview, one parent stated this duality succinctly, "As much as I loved her independence in the program, I would have loved an opportunity to have a chance to see some of the behind the scenes work on their projects."

BIG is working towards unified application of processes with parents through their 'minimum standard of care.' Based on parent feedback, these practices are not being applied with fidelity. Until this is done, parents merely have passive access to the community – access that is limited to students telling them about their day at the dinner table.

Counselors

When students are searching for pathways to their educational goals, counselors are critical. They know the different programs and opportunities that are open to students. When a student is looking for a different educational experience, a counselor might suggest BIG as an option. When a student hears something about BIG and wants to learn more, their guidance counselor is often the first stop. They are essentially the primary point of access for students to get information about BIG.

Because of their role in connecting students to the program, counselors are interesting stakeholders for IowaBIG. They are not part of students' daily activities, and they only

occasionally interact with BIG staff. Some might not even view them as stakeholders because their interactions are so infrequent. However, considering that they are the first point of contact when a student wants to investigate or sign up for BIG, they may be the most influential stakeholders. They have the power to redirect and dissuade students from the program. If they are not afforded legitimacy, they can truly do damage to the organization.

If the counselors do not feel as though they matter to the workings of the organization, they do not feel like legitimate participants. In our interviews, we uncovered several pressure points where counselors are desiring more information about the processes of IowaBIG and what their students are experiencing in the program. Based on the responses, one theme that emerged is that counselors would like more information about student progress (especially students who are not adjusting well), and more information about projects.

One counselor that we spoke with noted that one of the key functions of his job is to monitor students who are struggling. For mothership classes, this task is simple because he pulls grades from the student information system (Infinite Campus) and checks on students who are struggling in more than one class. He cannot do that for IowaBIG students. He noted that all he receives is the term end grade, "only the course they've completed and their grade, okay, that's all. Nothing." When problems arise, they noted that their inquiries to IowaBIG teachers often go unanswered. They only know that, if a student is not successful at BIG, they must find a way to reintegrate that student back into traditional classrooms. One counselor recalls an incident regarding a struggling student, "I believe they had a meeting with student and parent and teacher, which is good, but I don't know what led up to that piece of communication...I didn't know about it until after the fact, when I specifically asked." In this example, basic functions of the counselor's job cannot be completed because of the lack of progress communication from IowaBIG.

The other primary job function of school counselors is to advise students on what classes to take for the life path and future goals. In order to know if IowaBIG is a good fit for any given

student, the counselors must have a clear understanding of what exactly students are doing there. Several times during the two counselor interviews, they mentioned that they didn't know how to talk with students about BIG. One noted a time he was advising a student and said, "Here's the classes you could take, you'll be doing some project-based learning, but we don't have project information really." Another counselor mentioned that "[BIG sends] things like what courses they're offering. Not necessarily what kids will be doing, I also don't know that we get lists of their potential projects."

Research Question 3 - How does stakeholder experience with IowaBIG align with exemplary PBL programs? (Unified Application of Processes and Visibility of Products)

The final practice that supports legitimate levels of participation requires an organization, or community of practice to provide public products beyond the core membership to all participants (Wenger, 1998). Public products showcase to a larger audience the overall work of the community of practice, as well as celebrate the participants throughout their work to complete the products. Participants that feel included in the community of practice gain legitimacy and feel valued.

The products for project-based learning programs are found in the design and outcomes of each project, as well as embedded in the environment where the learning and work is performed. Gold standard project-based programs are structured in ways that integrate specific project design components with exemplary teaching practices (Figure 25).

We compared our data results and coding analyses to the Buck Institute for Education's Gold Standard rubrics (2019), looking for areas where IowaBIG aligned with effective strengths and areas where evidence showed weaknesses or opportunities for improvement.

Finding #3-1 – There are four primary areas

Figure 25: Gold Standard Project-based Learning

7 Exemplary PBL Design Elements

Challenging Problem or Question
Sustained Inquiry
Authenticity
Student Voice and Choice
Reflection
Critique and Revision
Public Product

7 Exemplary PBL Teacher Practices

Engage & Coach
Design & Plan
Align to standards
Build the Culture
Manage Activities
Scaffold Student Learning
Assess Student Learning

Note: This figure is modified from the original PBLWorks version. (www.PBLWorks.org)

where IowaBIG aligns with exemplary PBL practices:

Project Design: Authenticity of projects

"The project has an authentic context, involves real world tasks, tools, and quality standards, makes an impact on the world, and/or speaks to students personal concerns, interests, or identities" (Buck Institute, 2019)

IowaBIG claims that projects provide student participants with "classroom learning as it lives in actual practice through real business and community projects" (Registration Form). The 2019 Springpoint evaluation highlighted "the engagement of community partners resulted in an authentic and real-life feel to the project work done at IowaBIG".

This authenticity of projects ranked as the second highest response from students, with eight of our 16 survey responses commenting about their direct involvement with the community and the real problems they were helping to solve. Graduating seniors remarked that the projects were "empowering - making changes throughout the community," "community outreach - we find projects in the community, and we bring great projects to our community," and "focus is on the relevance - actual life things."

Six of our 13 parent surveys specifically cited “community focus”, “authentic problems”, and “real world” in their responses that dealt with projects. One parent survey said “My [child] has been on many different projects that have greatly had a positive influence on our community.”

A second parent said during an interview “[Child] was super excited they did a marketing campaign for [organization] that was one of her projects that actually went start to finish...and she was able to apply a lot of the terminology the marketing director was using and she understood. She was able to take like classroom knowledge to the real world and that was really exciting.”

Counselors stated they had limited knowledge about specific project options but did know that students “have to interact with some community members and they have to be able to take some initiative to schedule meetings and attend things that aren’t necessarily on a regular schedule.”

Project Design: Student voice and choice

“Students have opportunities to express their voice and make choices on important matters (topics, questions to ask, resources, people to work with, products to create, use of time, organization of tasks). Students have opportunities to take significant responsibility and work independently from the teacher as appropriate, with guidance.” (Buck Institute, 2019)

Students are provided different project options to select from and are encouraged to choose projects and teams that “align to something you are interested in learning or doing.” (2021-22 Student Playbook). Students can also propose “outbound or personal passion projects.” (2021-22 Student Playbook)

Results show that IowaBig provides students with numerous opportunities and encourages them to express their voice and choice. In senior exit surveys describing IowaBIG, terms like “opportunity” and “personalization” showed up in almost 20% of their responses. When asked what BIG was really good at, one senior said

“Voice. Promoting and finding your voice. Good at pushing you to vocalize your frustrations and joys.” Another student said “Lots of opportunities and realization that not every day is going to be the same like school treats it. Things are different each day, making us more responsible.”

A parent interview noted the number of different options students had and how they could suggest new ones. “[Students] could suggest ideas for projects they had a pension for and then there’d be an idea boards and you could kind of shop for a project, that if your heart led you to it you could participate, and you could be like doing one project at a time or multiple projects at a time.”

Teacher Practices: Build the culture

“Student voice and choice is regularly leveraged and ongoing, including identification of real-world issues and problems students want to address in projects. Students understand there is no single right answer or preferred way to do a project, and that it is okay to take risks, make mistakes, and learn from them. Students work collaboratively in healthy, high-functioning teams, much like an authentic work environment; the teacher rarely needs to be involved in managing teams. The values of critique and revision, persistence, rigorous thinking, and pride in high quality work are shared, and students hold each other accountable to them.” (Buck Institute, 2019)

The culture at IowaBIG builds off their emphasis

BIG has just put me in situations where I just have to constantly be talking to my partners on projects, so I don’t have the option of sitting quietly in class or whatever, so it’s made me much better at being able to communicate what I’m trying to say without seeming pretentious or like overbearing and be able to communicate with people and my peers a lot.

—Student Interview

on providing voice and choice to students and engaging them in authentic project work. The Springpoint evaluation (2019) highlighted the

culture of growth and learning that IowaBIG had established. The report stated that “Iowa BIG’s model is an asset-based approach to learning that supports learners in risk-taking, personal growth, and a willingness to learn from mistakes. As a result, learners at Iowa BIG are “profoundly comfortable taking risks, making mistakes and learning from them, and applying those learnings across multiple contexts.” The 2021-22 Staff Playbook prioritizes the culture at BIG by saying “We believe that a strong, inclusive, welcoming community and culture is critical to helping unleash potential and ensure that every learner in our care feels welcomed and valued. This isn’t done accidentally or just based on the people we happen to be. Community and culture are purposeful endeavors that we pay as much or more attention to as anything else we do.”

Student responses across all instruments mirror the Springpoint findings for the culture at IowaBIG. The relationships and connections between students and IowaBIG staff were reported as positive and a key aspect that makes the culture of BIG so supportive. Seniors overwhelmingly described these experiences as positive, using terms and phrases such as “welcoming”, “engaging”, “safe”, “flexible”, and “community”. One senior explained the culture at BIG as one that “pushes you to become the leader of your own life, motivate yourself and yet are still there for help and guidance but you make your own decisions – learn from your own mistakes.” Underclass students reported similar feelings about the culture at BIG, with one student saying “The personal connections and conversations I have with my teachers and fellow BIG students is on a whole different level”. Of the 12 underclass survey participants, 11 of them are returning to BIG for another year. The lone non-returning student had scheduling conflicts and could not fit BIG into their schedule to return.

Parent and counselor data also suggest the culture at BIG is a key factor in student interest and satisfaction. One parent noted that if her student could have attended BIG all day, she would have. Several other parents noted the flexibility and engagement that BIG offered was an influential difference their students benefited from. One parent commented on the growth they saw in their student, saying “having BIG for [them] was the exact right thing”. Counselors

pointed out that BIG is “a bit of an alternative to the traditional setting” and a “really cool program for students to do elective courses”.

Teacher Practices: Engage and coach

“The teacher’s knowledge of individual student strengths, interests, backgrounds, and lives is used to engage them in the project and inform instructional decision-making. Students’ enthusiasm and sense of ownership of the project is maintained by the shared nature of the work between teachers and students. Individual student needs are identified through close relationships with the teacher; needs are met not only by the teacher but by students themselves or other students, acting independently.” (Buck Institute, 2019)

The IowaBIG culture that has been built allows teachers to know and interact with students in supportive and engaging ways. Student comments supporting this practice focused primarily on the relationships and comfort they had in working with BIG teachers and staff. One student interviewee said one hint they’d give new students is to build connections with their BIG teachers because that would really help them succeed. Student surveys highlighted different ways teachers connected with students and provided coaching to learn the BIG system. One senior commented that BIG was “more than welcoming. Create connections with teachers, a lot like family. Personal questions [other] teachers would ask.” A survey response from an underclass participant stated, “Teachers at BIG are actively interested in progressing your skills and interests.”

IowaBIG has continued to improve this key aspect of its program by adding a “Staff Playbook” that includes a Minimum Standard of Care for BIG Students. Embedded in this section are specific expectations and goals for “Personal Connections/Relationships” (Figure 26).

The emphasis on getting to know students and coaching them through the project process has shown improvement during, and perhaps because of our study. This school year BIG incorporated an initial project at the beginning of the year to introduce students to project-based learning and the ins and outs of how to work as teams, structure and assign tasks, communicate with teachers and group members, and create a

product. One student reflected that “so this year, the teachers had us on I believe this three-week project to get a practice run into what being on a project is like. And that was super helpful to have an established structure and kind of pace, as well as like we’re expected to get things done quickly and we need to keep moving forward.”

Finding #3-2– There are four primary areas where IowaBIG can improve to better align with exemplary PBL practices:

Manage activities

“Features an appropriate mixture of individual and team work time, whole group and small group instruction. Routines and norms are consistently followed during project work time to maximize productivity. Project management tools are used to support student self-management and independence. Realistic schedules, checkpoints, and deadlines are set but flexible; no bottlenecks impede workflow. Well-balanced teams are formed according to the nature of the project and student needs, with appropriate student voice and choice.” (Buck Institute, 2019)

Management of activities was identified as an issue in the Springpoint evaluation, with teachers stating “One of the things we had a hard time with was the student work protocol. We don’t really have rubrics. We thought it better to just come together.” (2019). Students also pointed out the lack of accountability and deadlines, and the perceived inequity in participation by team members. One student from a focus group for that evaluation (2019) stated “people in my group are not doing what they need to do, and I haven’t seen them held accountable.”

Accountability and equity in work continue to be issues that were highlighted during our study. Across all the student surveys and interviews, 19 of the 23 responses that mentioned management were specific regarding holding students accountable for attendance and work completion. One interview illustrated the depth of the issue, saying “It’s very frustrating when you feel like other people aren’t pulling their own weight. And there’s not a lot of accountability for that and I’m sure that other people have been on the other end of that with me. So, I do wish there was a little bit more Wash style accountability like well if this isn’t in by this deadline, then you’re getting a zero or whatever, and whatever the BIG equivalent of that is I think sometimes there’s

a little bit too much flexibility in student-based learning. “

Student survey responses suggested that management was an area that would improve students’ experiences, suggesting that “sometimes we need a nudge - help with managing our freedom.” Another student suggested that “consistent project check ins to ensure everything is done and all group members are participating.”

Parents also commented on the management of project work and how that would allow them to better support their students. One parent remarked that “they need to know how to organize themselves...and some kids might need like a mini executive functioning type course to help them function through the that.” Other suggestions for improvement included sharing schedules and deadlines and providing an overview of what a day and year at BIG looks like for students.

Assessment of student learning

“Project products and other sources of evidence are used thoroughly to assess subject-area standards as well as success skills. Individual student learning is adequately assessed, not just team-created products. Structured protocols for critique and revision are used regularly at checkpoints; students give and receive effective feedback to inform instructional decisions and students’ actions. Standards-aligned rubrics are used by students and the teacher throughout the project to guide both formative and summative assessment.” (Buck Institute, 2019)

Assessment of student learning was identified by the executive director as one of the priority areas for improvement before we undertook our study. They stated that teachers struggle to find clear ways to measure and communicate what students are learning. BIG has added specific links to standards to both the 2021-22 Staff and Student Playbooks, with distinct categories of standards: Integrated, Active, Focused, and Seminar (Figure 27). Embedded within each category are examples of specific content-area standards, as well as skill standards that apply to students’ demonstration of AGILE principles. It is important to note that this current list of standards for disciplines is not exhaustive compared to Iowa state standards.

Based on our data collection and analysis, assessment continues to be an area where BIG

Figure 27: 2021-22 Staff Playbook excerpt from “Standards in Projects & Seminars” (page 14)

SUBJECT/COURSE	STANDARD
English	Speaking and Listening: Collaboration Sources and Evidence Audience Reading nonfiction/information
Sociology	Group Norms Social Inequity Individual vs. Group
Psychology	Interactions Factors
Marketing	Communicate effectively with various business constituencies
Intro To Agile	Purpose Responsibility Authenticity Appreciation Creativity Communities Leadership Learning Appreciation

“An email to parents... summarizing the work, providing contact information, etc.

“After retrospectives... an email to parents discussing their work and progress.”

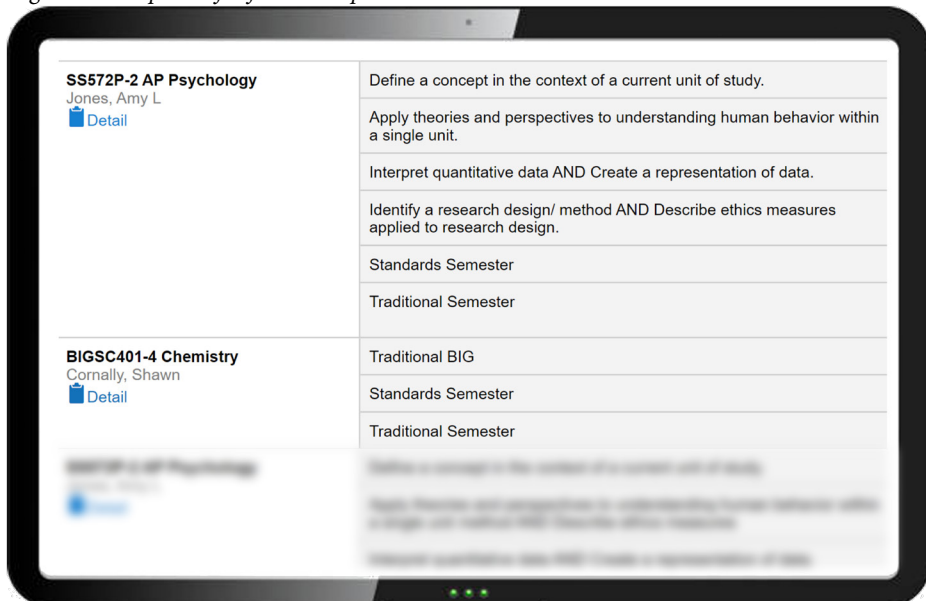
Both counselors also stated that assessment and progress reporting was a major issue and they do not know how students project work meets standards. Their perception is one where “my professional opinion is that they’re just not getting the same content and many students would say the same thing.” One counselor also stated, “I don’t know what that looks like for them, but I

struggles. All stakeholder groups point to the need for more regular reporting, with 5 out of 15 students and 5 out of 6 parents requesting more progress reports and grade updates. One student interviewee stated “Requirements for the classes are not very clear. It is hard to tell how and if I met them in my project. I need things to be more clear. Need to be visible and clear.”

would like to be able to look at Campus and have families looking at Campus and see what their attendance looks like, and also what does the grading look like, how are they doing on different standards.” A view from Infinite Campus (Figure 28) does show a disparity in what students see for mothership and IowaBIG courses.

Several parents responded through our survey that assessments, assignments, and grade information from IowaBIG is shared not with parents, nor is it accessible through the parent portal. This data counters information in the 2021-22 Staff Playbook that outlines the expectations for parent communication. According to a portion of IowaBIG’s “Minimum Standard of Care for Parents”, parents should receive regular updates such as:

Figure 28: Snapshot of Infinite Campus



Note: Specific standards are linked directly to mothership courses. IowaBIG courses lack these standards.

Sustained inquiry

“Inquiry is sustained over time and academically rigorous (students pose questions, gather & interpret data, develop & evaluate solutions, ask further questions). Inquiry is driven by student-generated questions throughout the project.”
(Buck Institute, 2019)

IowaBIG uses the AGILE framework to guide students through their project work. Students are required to complete a course in AGILE and learn how to apply the principles and practices to their daily project work. According to the course syllabus, “Each Iowa BIG student is given freedom to experiment in how they best communicate, show intention, make work visible, integrate into a community, and reflect on their current and/or emerging purpose. Successful students will exit this course with good habits in these areas.”

The goal of the course is to make student work visible, including tracking tasks, communicating progress daily, identifying hurdles, and celebrating progress publicly. According to IowaBIG, “if your work isn’t visible it didn’t happen”.

Students and counselors both report a lack of engagement with this AGILE course and process. According to one student, “Lots of kids didn’t connect with AGILE – it wasn’t a lived experience like the other things we do.” Another student explained some struggles with the AGILE process, stating that “figuring out what groups

needed Kanban boards, because we didn’t decide – taking the time out of every meeting to set that up and follow it.”

Our interview with one counselor revealed that “they don’t even know that they’re in the class and they’re getting a credit for it.”

Public product

“Student work is made public by presenting, displaying, or offering it to people beyond the classroom. Students are asked to explain the reasoning behind choices they made, their inquiry process, how they worked, what they learned, etc.”
(Buck Institute, 2019)

Student surveys indicated they shared their work from IowaBIG with several different groups. As seen in Figure 29, students are sharing work within IowaBIG and their closest family and friends. We see that sharing with community members ranks fourth, with five out of 17 students indicating they are not sharing their project work with community members and possibly the partners they are working for. One student suggested more in-house sharing by creating “opportunities to show others what we are learning and doing. Others need to see the work others are doing, especially those cool things.”

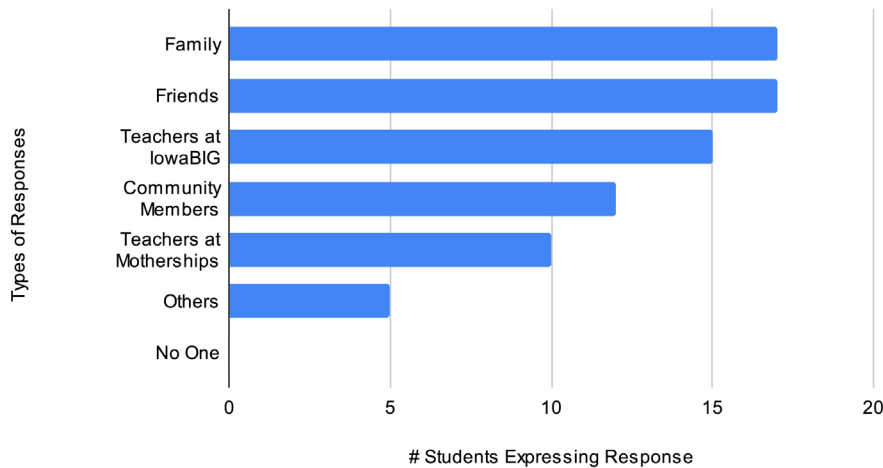
The discrepancy in sharing and making work visible beyond the classroom is revealed further with data from parents and counselors. Our parent surveys and interview showed that they receive no communication from IowaBIG about

completed projects, nor were they invited to celebrate their student’s final work. During our interview, one parent expressed “[I] would have loved to have gone and seen more of what they were doing, like, not an open house, but like maybe if they finished a project or got to see some more of the final project.”

Counselors were not aware of completed projects, nor did they report being informed of the different

Figure 29: Student Survey Responses to Question 2.7

Who do students share their IowaBIG work with?



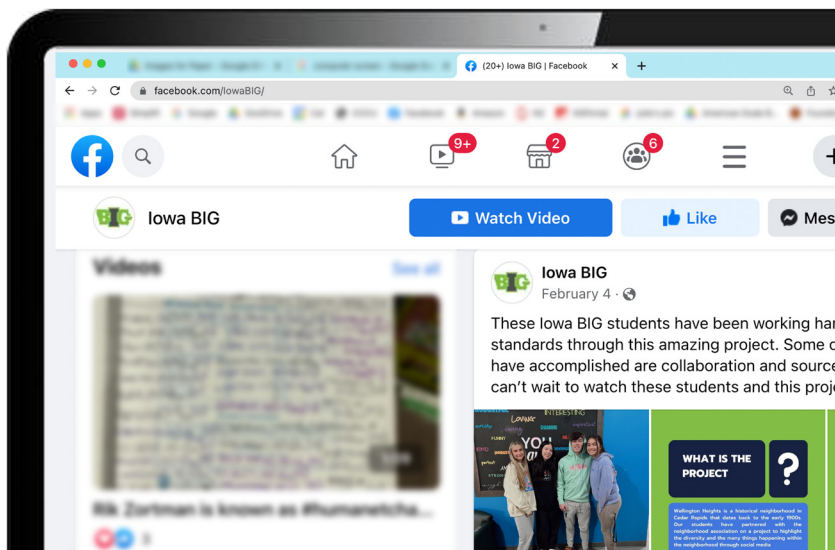
options available to students. One counselor stated, “I actually don’t know that I’ve ever really gotten anything about their project completion. Actually, that would be something that would be really helpful in promoting the program.”

Our analysis of public websites relating to IowaBIG revealed that there were no active links for the project options currently being pursued, nor were there any links to completed projects. There were several posts on the IowaBIG Facebook page and two blog posts that referred to several completed projects. The Education Re-Imagined website (2022) follows one student and their IowaBIG journey. The story “How One

our survey was completed by IowaBIG teachers during the morning and afternoon sessions. We did not receive student emails for any follow-up reminders or requests for completion. As a result, many students opened the survey but did not answer any questions.

In addition, it is important to note that interviews and surveys were conducted with just three of the stakeholder groups. We were not given access to BIG instructors, community partners, or mothership administrators. In future studies, their voices could give important contributions to more fully understanding the stakeholder orientations.

Figure 30: IowaBIG Facebook Page



Amazing Day Re-Defined my Comfort Zone” mentions the projects they were involved in, however, there are no working links to see what the completed projects look like. The Facebook page for the school does have some projects posted that students and staff could access if they wanted. For example, the Facebook posting from February 14 in Figure 30 describes one of the introductory 3-week projects.

LIMITATIONS

Our study of IowaBIG has several key limitations that affected our participation and interpretation of data. Student surveys were administered on a single day at the end of the 2020-21 school year. Due to the Covid pandemic, few students were in attendance in-person, with most participating through Zoom. Explanation and monitoring of

PBL programs are highly dependent on their context, so generalizability of findings and recommendations is limited. Implementation studies for PBL are the most difficult to design and analyze due to the many contextual differences among programs. IowaBIG is no exception. Students attend and participate on a separate campus, with students combined from different schools and backgrounds. Other PBL programs should not look at what BIG partner districts have done and try to apply them.



RECOMMENDATIONS

Triangulation of the various sources of data and review of the research around our conceptual framework result in seven recommendations focused on the three key operational functions. All our recommendations are immediate and short-term improvement strategies, focused on improving the legitimacy of stakeholders and moving them toward more legitimate participation in the IowaBIG community of practice.

#1 CLARITY OF PURPOSE

We recommend that IowaBIG consistently communicate a single clear vision - of “Passion. Projects. Community.” that is displayed on the IowaBIG website (Figure 31). We feel this vision statement clarifies the true purpose of IowaBIG, which allows students to pursue their interests and passions, uses projects as the vehicle for authentic student learning, and engages students with the broader Cedar Rapids community to develop citizenship and involvement.

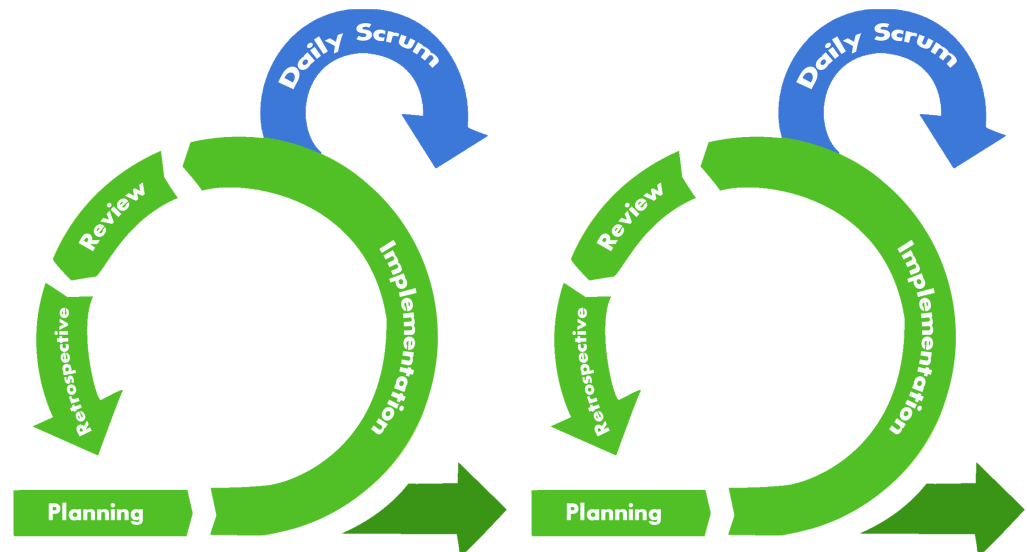
Figure 31: Proposed Purpose statement from IowaBIG website



#2 UNIFIED APPLICATION OF THE PROCESS

We found that there were some significant gaps and inconsistent processes that were vital to pulling stakeholders into the BIG community of practice. We feel that the following recommendations would create more legitimacy for different stakeholder groups. This in turn would strengthen stakeholder understanding, knowledge, and commitment to the program, creating a stronger and more integrated community of practice. Our final recommendation in this area is toward the inquiry process that IowaBIG uses. Strengthening the implementation of AGILE, especially through the introductory three-week project will bring students into the process of BIG with more confidence and allow students to practice the very skills necessary for success in their larger projects.

Figure 32: AGILE Scrum process



Note: Scrum protocols call for short iterative cycles with daily team meetings

Students: Continue iterating the introductory three-week projects.

Parents: Revisit their minimum standard of care for parents and follow that with fidelity.

Counselors: Add a minimum standard of care for motherships that mirrors the one for parents

Process: Implement the Agile process with more fidelity (Figure 32)

#3 MAKE THE PRODUCTS VISIBLE

Our final set of recommendations combines the exemplar PBL practice of “Public Products” and the AGILE principle of “Make it visible or it didn’t happen”. IowaBIG itself emphasizes this it’s “Overarching non-negotiable principle”, but as we’ve seen there are gaps with what products are visible to stakeholders. Our recommendations are two-fold, focusing on projects and student progress. Improved visibility of each increases transparency of the purpose and processes of IowaBIG, and is improves inclusivity of key stakeholder groups that were shown to be left out.

Projects:

- Updating new project options and they become available and link this list to the IowaBIG platforms (Website, Facebook)
- Publish completed projects across publicly viewed platforms and establish a completed project artifact link for easy access

Student Progress:

- Establish and follow consistent student progress reporting dates that make student progress more frequent and visible to stakeholders through platforms that are accessible to participants (Infinite Campus, BBQ)

Remember... “Make it visible or it didn’t happen” (AGILE course syllabus 2021)

CONCLUSION

IowaBIG aims to solve complex problems in both high school education and in the Cedar Rapids community. Since its inception, the leadership has worked to continuously improve key organizational functions. In an effort to offer valuable experiences to student participants, BIG has incrementally modified key practices based on student feedback. In this way, IowaBIG is responsive to the needs of the students.

While important stakeholders, students are not the only participants who need attention. Continuous improvement for the entire IowaBIG community of practice will require IowaBIG to implement strategies that will legitimize their other

key stakeholders, namely counselors and parents. Even students at BIG recognize the importance of bringing the different stakeholders in as more legitimate participants, with one senior specifically stating BIG “needs to talk to the people at (the) regular high school to help them better understand and build some bridges.”

As IowaBIG moves from its infancy as a school program, it is important that the purpose becomes more cohesive, the processes more reliable and better understood, and the products shared more broadly. These actions will not only allow student participants to be brought on board more successfully, but it will also make it more likely that parents and counselors understand and support the work. Legitimizing these stakeholder groups into the BIG community will increase the value placed on and strengthen the reach of BIG fortifying the unique and worthwhile program.





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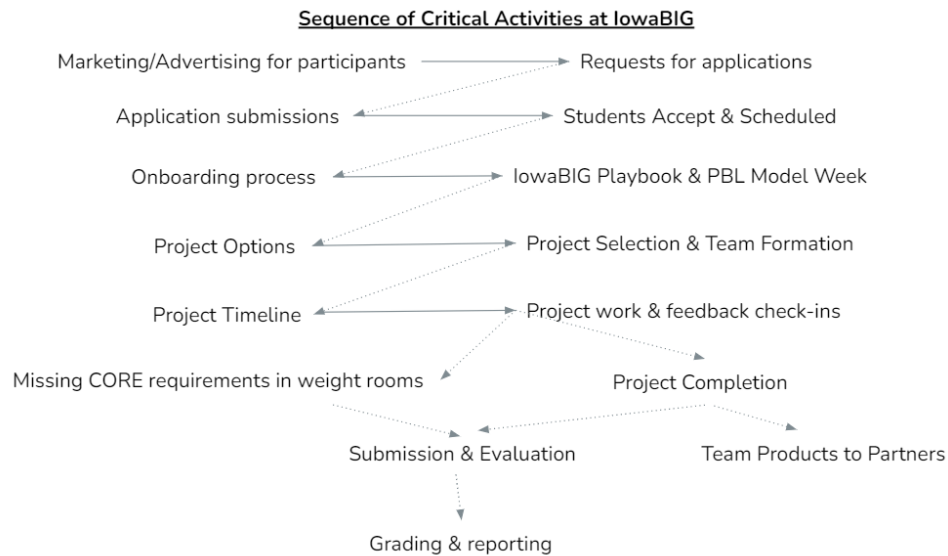
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APPENDIX A

Critical Activities at IowaBIG



APPENDIX B

Student Survey Questions on Qualtrics

Section 1: Introduction

Thank you for taking our Student survey about IowaBIG.

APPENDIX

Your honest responses and suggestions will help improve the student and parent experience so that we can better serve students and families for future years. All of your answers will be kept confidential.

This survey is divided into 5 sections and will take approximately 20 minutes.

At any time you can pause and come back later to complete it.

Section 2: Student Learning

For the following questions, select the best option for both your home high school (mothership) and IowaBIG under the column for each.

2.2 I am knowledgeable about my learning at their home high school (mothership)...

2.3 I am knowledgeable about my learning at IowaBIG...

2.4 I can explain what I am learning at my home high school (mothership)...

2.5 I can explain what I am learning at IowaBIG...

2.6 I share schoolwork from my home high school (mothership) with:

(select all that apply)

2.7 I share schoolwork from IowaBIG with:

(select all that apply)

2.8 I can explain what I do in classes at my home high school (mothership)...

2.9 I can explain what I do while in classes at IowaBIG...

For the next 2 questions, think about the mission/purpose of each of the schools as you understand them.

2.11 Briefly explain the mission/purpose of your mothership (home high school) as you understand it:

2.12 Briefly explain the mission/purpose of IowaBIG as you understand it:

2.13 What do you see to be the primary differences in the learning that happens at IowaBIG and your home high school?

2.14 What are your personal learning goals while at your mothership?

2.15 What are your personal learning goals while at the IowaBIG program?

Section 3: Communication

3.1 I receive adequate information about my progress in my coursework from my mothership...

3.2 I receive adequate information about my progress in my coursework from IowaBIG...

3.3 There is value in knowing about my coursework progress at their mothership...

3.4 There is value in knowing about my coursework progress at IowaBIG...

3.5 How often do you receive information about your progress from your mothership?

3.6 How often do you receive information about your progress from IowaBIG?

For the next 4 questions, think about the information you receive about your progress. Briefly list the types of information that you receive from instructors.

3.7 Regarding grade information from your mothership, what kind of information do you receive?

(select all that apply)

3.8 Regarding grade information from your mothership, what kind of information do you receive?

(select all that apply)

3.9 Regarding grade information that you receive from your mothership, what is missing or could be strengthened?

3.10 Regarding information on how you can improve from your mothership, what kind of information do you receive?

(select all that apply)

3.11 Regarding information on how you can improve that you receive from your mothership, what is missing or could be strengthened?

3.12 Regarding grade information from IowaBIG, what kind of information do you receive?

(select all that apply)

3.13 Regarding grade information that you receive from IowaBIG, what is missing or could be strengthened?

3.14 Regarding information on how you can improve from IowaBIG, what kind of information do you receive?

(select all that apply)

3.15 Regarding information on how you can improve that you receive from IowaBIG, what is missing or could be strengthened?

Section 4: Navigating Two Schools

4.1 I can explain the purpose of the IowaBIG experience to other students...

4.2 How likely would you be to recommend IowaBIG to another student?

4.3 I am primarily an IowaBIG student.

4.4 I am primarily a student of their home high school.

4.5 I am equally a student of both IowaBIG and my mothership.

4.6 I identify most with the type of learning offered at IowaBIG.

4.7 I identify most with the type of learning offered at their home high school.

4.8 I identify equally with the type of learning offered at BOTH their home high school and at IowaBIG.

Section 5: Overall Experience

5.1 How did you benefit from your participation in the IowaBIG program?

5.2 At the beginning of the year, I wish that I would have known...

5.3 Following the 2020-2021 school year, I still don't know/I wish that I knew...

5.4 What challenges need to be addressed to improve the IowaBIG experience?

Section 6: Background Information

6.1 Number of years you have attended IowaBIG: 1 - 2 - 3

6.2 Do you plan on returning to IowaBIG during the 2021-22 school year? Yes - No - Not Sure - Graduated

- 6.3 If you answered “No” to returning to IowaBIG, please list or explain several reasons for your decision.
- 6.4 Your grade in school for the upcoming 2021-22 school year:
- 6.5 My home high school is: Wash - Jeff - Kennedy - Prairie
- 6.6 Would you be willing to participate in a follow-up interview?
- 6.7 If you are willing to participate in a follow-up interview, please leave your email address or the best phone number at which to contact you.

Parent Survey Questions from Qualtrics

Section 1: Introduction

Thank you for taking our Parent survey about IowaBIG.

Your honest responses and suggestions will help improve the student and parent experience so that we can better serve students and families for future years. All of your answers will be kept confidential.

This survey is divided into 5 sections and will take approximately 20 minutes.

At any time you can pause and come back later to complete it.

Section 2: Student Learning

For the following questions, select the best option for both your student’s home high school (mothership) and IowaBIG under the column for each.

- 2.2 I am knowledgeable about how my student(s) are learning at their home high school (mothership)...
- 2.3 I am knowledgeable about how my student(s) are learning at IowaBIG...
- 2.4 I can explain what my student(s) are learning at their home high school (mothership)...
- 2.5 I can explain what my student(s) are learning at IowaBIG...
- 2.6 My student(s) share schoolwork from their home high school (mothership) with:
(select all that apply)
- 2.7 My student(s) share schoolwork from IowaBIG with:
(select all that apply)
- 2.8 My student(s) can explain what they do while in classes at their home high school (mothership)...
- 2.9 My student(s) can explain what they do while in classes at IowaBIG...

For the next 2 questions, think about the mission/purpose of each of the schools as you understand them.

- 2.11 Briefly explain the mission/purpose of your student’s mothership (home high school) as you

understand it:

2.12 Briefly explain the mission/purpose of IowaBIG as you understand it:

2.13 What do you see to be the primary differences in the learning that happens at IowaBIG and your student's home high school?

2.14 What are your student's personal learning goals while they're at their mothership?

2.15 What are your student's personal learning goals while they're at the IowaBIG program?

Section 3: Communication

3.1 I receive adequate information about my student's progress in their coursework from their mothership...

3.2 I receive adequate information about my student's progress in their coursework from IowaBIG...

3.3 There is value in knowing about my student's coursework progress at their mothership...

3.4 There is value in knowing about my student's coursework progress at IowaBIG...

3.5 How often do you receive information about your student's progress from their mothership?

3.6 How often do you receive information about your student's progress from IowaBIG?

For the next 4 questions, think about the information you receive about your progress. Briefly list the types of information that you receive from instructors.

3.7 Regarding grade information from your student's mothership, what kind of information do you receive?

(select all that apply)

3.8 Regarding grade information from your student's mothership, what kind of information do you receive?

(select all that apply)

3.9 Regarding grade information that you receive from their mothership, what is missing or could be strengthened?

3.10 Regarding information on how your student(s) can improve from their mothership, what kind of information do you receive?

(select all that apply)

3.11 Regarding information on how your student(s) can improve that you receive from your student's mothership, what is missing or could be strengthened?

3.12 Regarding grade information from IowaBIG, what kind of information do you receive?

(select all that apply)

3.13 Regarding grade information that you receive from IowaBIG, what is missing or could be strengthened?

3.14 Regarding information on how your student(s) can improve from IowaBIG, what kind of information do you receive?

(select all that apply)

3.15 Regarding information on how your student(s) can improve that you receive from IowaBIG, what is missing or could be strengthened?

Section 4: Navigating Two Schools

4.1 I can explain the purpose of the IowaBIG experience to other parents...

4.2 How likely would you be to recommend IowaBIG to another parent?

4.3 My student is primarily an IowaBIG student.

4.4 My student is primarily a student of their home high school.

4.5 My student is equally a student of both IowaBIG and my mothership.

4.6 My student identifies most with the type of learning offered at IowaBIG.

4.7 My student identifies most with the type of learning offered at their home high school.

4.8 My student identifies equally with the type of learning offered at BOTH their home high school and at IowaBIG.

Section 5: Overall Experience

5.1 How did your student benefit from their participation in the IowaBIG program?

5.2 At the beginning of the year, I wish that we would have known...

5.3 Following the 2020-2021 school year, we still don't know/I wish that we knew...

5.4 What challenges need to be addressed to improve the IowaBIG experience?

Section 6: Background Information

6.1 Number of years your student has attended IowaBIG: 1 - 2 - 3

6.2 Does your student plan on returning to IowaBIG during the 2021-22 school year? Yes - No - Not Sure - Graduated

6.3 If you answered "No" to returning to IowaBIG, please list or explain several reasons for your student's decision.

6.4 Your student's grade in school for the upcoming 2021-22 school year:

6.5 My student's home high school is: Wash - Jeff - Kennedy - Prairie

6.6 Would you be willing to participate in a follow-up interview?

6.7 If you are willing to participate in a follow-up interview, please leave your email address or the best phone number at which to contact you.

APPENDIX C

Student Questions for Semi-structured Interviews

Dual Participation Questions:

What's been "bumpy" about being in both schools?

What challenges do you have being at both schools?

How have you overcome these?

Do you think you are treated differently because you are a BIG student?

Do you think are perceived differently – by home teachers, other students?

When you talk about BIG to peers at your home school, what are things that you have to explain?

Where do you think you "fit in" best? Why?

Onboarding to BIG:

What was your introduction to BIG like?

What was helpful?

What was messy...or missing that would have helped?

What would have been nice to know about participating at BIG before applying and enrolling?

If you could mentor a new BIG students, what hints would you provide to make it a successful experience for them?

What would you tell them about balancing both school experiences?

BIG participation:

BIG prioritizes learning and growth over formal "grades"...unlike mothership's traditional approach. What's been the obstacle for you living in these 2 different systems?

As part of the decreased emphasis on grades as a theme – what is your interpretation of why you receive grades? What value does your work at IB look like? Do you ever get individualized feedback from IB about your work and learning(vs group feedback)?

If you could design better "progress checks" what would that look like?

How did you integrate your knowledge and skills from BIG back to your mothership(traditional) learning? How do you integrate your knowledge and skills from MS to your BIG classes?

When do you get most frustrated at BIG?

What would you change about participating @ BIG?

What is +/- about the feedback you get from BIG?

What +/- about the work/projects that are given?

What's missing in BIG?

What do you see as the biggest benefit to participating in BIG

Do you feel that your learning at BIG has prepared you sufficiently for whatever is your next step – employment, college, etc.?

If you could mentor or be part of a training program for new BIG staff/teachers, what would you recommend?

Parent Questions for Semi-structured Interviews

Dual Participation Questions:

What's been "bumpy" about your student being in both schools?

What challenges did you see them having by being at both schools?

How have they overcome these?

Do you think they are treated differently because they are BIG students?

Do you think they are perceived differently – by home teachers, other students?

Where do you think they "fit in" best? Why?

Onboarding to BIG:

What was your introduction to BIG like?

What was helpful?

What was messy...or missing that would have helped?

What would have been nice to know about participating at BIG before applying and enrolling?

If you could mentor new BIG parents and students, what hints would you provide to make it a successful experience for them?

What would you tell them about balancing both school experiences?

BIG participation:

BIG prioritizes learning and growth over formal "grades"...unlike mothership's traditional approach. What's been the obstacle for you living in these 2 different systems?

As part of the decreased emphasis on grades as a theme – what is your interpretation of why your kid receives grades? Talk about what work you saw? Do/Did you ever get individualized feedback from IB about your child's work and learning (vs group feedback)?

If you could design better "progress checks" what would that look like?

How did you integrate your knowledge and skills from BIG back to your mothership(traditional) learning? How do you integrate your knowledge and skills from MS to your BIG classes?

When do you get most frustrated with BIG?

What would you change about participating @ BIG?

What is +/- about the feedback you get from BIG?

What +/- about the work/projects that are given?

What's missing in BIG?

What do you see as the biggest benefit to participating in BIG

Counselor Questions for Semi-structured Interviews

Dual Participation Questions: (What is the experience like for students to be a student in both types of school)

What is “bumpy” about participating in IowaBIG about being in both schools?

For students?

For parents?

For counselors?

What are ways that you’ve overcome these?

Are IowaBIG students treated differently?

Onboarding to BIG:

What was your introduction to BIG like?

What was helpful?

What was messy...or missing that would have helped?

What would have been nice to know about participating at BIG before applying and enrolling?

How do you feel about student & parent introductions to BIG?

What’s helpful?

Messy? Missing?

BIG participation:

BIG prioritizes learning and growth over formal “grades”...unlike CR’s traditional approach. What’s been the obstacle living in these 2 different systems?

Students?

Parents?

You(guidance)?

As part of the decreased emphasis on grades as a theme – what is your interpretation of why you receive grades? What value does your work at IB look like? Do you ever get individualized feedback from IB about your work and learning(vs group feedback)?

If you could design better “progress checks” what would that look like?

How did you integrate your knowledge and skills from BIG back to your mothership(traditional) learning? How do you integrate your knowledge and skills from MS to your BIG classes?

When do you get most frustrated at BIG?

What would you change about participating @ BIG?

What is +/- about the feedback you get from BIG?

What +/- about the work/projects that are given?

What's missing in BIG?

What do you see as the biggest benefit to participating in BIG

Do you feel that your learning at BIG has prepared you sufficiently for whatever is your next step – employment, college, etc.?

If you could mentor or be part of a training program for new BIG staff/teachers, what would you recommend?

