Closing the College Readiness Gap:
Tools for Preparing Students for College Success

Arlene King-Berry[1], Wade Ellis[2], Dan Apple[3]

Abstract

It is generally accepted that a gap exists between the performance capacity of typical high school students entering college and the performance capacity required for academic success during their first year. This article addresses this college readiness gap by offering four research-based tools designed to help secondary and post-secondary educators establish educational goals for students in high school and in their first year of college and then to measure student progress toward achieving these goals. The profiles (Profile of an Incoming High School Graduate with Typical Readiness Gaps, and Profile of a Successful First-Year College Student), are used for establishing the educational goals while the rubrics (Holistic Rubric for Assessing Learner Performance Level, and Analytic Rubric for Assessing Learner Performance Level) are used to measure the levels of performance with respect to the profiles (degree of goal achievement). The authors also describe possible uses of these tools to improve student success.

Introduction

As students progress through college, many encounter gaps between the preparation they received in high school and that required for success in a higher education setting. As a result of this readiness gap, some students stop out or drop out. This affects retention and graduation rates, making college readiness and the college readiness gap of great concern to institutions of higher education (IHEs).

The purpose of this article is to present tools that can facilitate the ability of educators to (a) assess students' college readiness, (b) prepare students for first year college success and (c) address the retention and graduation issues that most colleges and universities face. Although these three abilities are useful for high school teachers and counselors, they are especially important for educators who work with students at any phase of their first year of college:

- before (boot camp-type preparation)
- during (first-year experiences)
- after (recovery courses for students who were unsuccessful)

Using the framework of the Profile of a Quality Collegiate Learner (Apple et al., 2016), this article presents two model profiles of learner capacity. Profile I describes a college entry-level student who may exhibit a college readiness gap. Profile II describes a successful first-year college student who would meet the expectations of most colleges. The profiles can be used to establish educational goals for students and to prepare students for success at crucial learning levels (i.e., first-year lower division courses, upper division courses, and major courses). The article also presents holistic and analytic measures that IHEs can use to determine their degree of success in meeting the educational goals set for students. Table 1 lists these tools and their recommended use by secondary schools and IHEs.

College Readiness of High School Graduates

According to Conley (2011), college readiness can be defined operationally as the level of preparation a student needs to: (a) enroll and succeed, without remediation, in a credit-bearing, general education course at a postsecondary institution that offers a baccalaureate degree or (b) transfer to a baccalaureate program. The University of Iowa, in its Iowa testing program, defines *college readiness* as "the level of achievement a student should attain to be ready to enroll and succeed, without remediation, in credit-bearing postsecondary courses" (University of Iowa, 2018).

Application of these definitions indicates that high schools are failing to teach the basic math and English skills needed for first-year college success. Campbell (2019) states that, "The national [ACT score] average for students meeting college-readiness benchmarks in math and English each dropped one percentage point, to 39 percent and 59 percent, respectively, in 2019." She points out that "concerns about college readiness persisted with students in under-served populations, as only 81 percent of those students met one of the four benchmarks [math, English, reading and science] and 9 percent met three or four benchmarks."

---

[1] University of the District of Columbia

[2] West Valley College, Emeritus

[3] Pacific Crest

Table 1 Tools for Addressing College Readiness and the College Readiness Gap

	Tool	Use by Secondary Schools	Use by Institutions of Higher Education
Student Profiles	*Profile I: Incoming HS graduate with typical readiness gaps* *Profile II: Successful first-year college student*	Determine the level of student learning performance with attention to specific gaps in readiness.	Edit the Model Profiles I and II to best represent the performance of actual students at that institution.
		Establish educational goals for individual students or student cohorts	Establish educational goals/ standards for individual students or student cohorts.
		Design transformational learning experiences and learning-to-learn materials that address readiness gaps and prepare individual students or student cohorts for first-year success in college.	Design learning experiences that prepare individual students or student cohorts for college success.
Rubrics	*Holistic Rubric for Assessing Learner Performance Level* *Analytic Rubric for Assessing Learner Performance Level*	Assess the school's success in meeting educational goals to decrease or eliminate college readiness gaps.	Measure the success in meeting educational goals/ standards set for students.
		Design transformational learning experiences that prepare students for success.	Design transformational learning experiences that prepare students or student cohorts for college success.

Using data from the longitudinal Indiana Student Information System, a study of Indiana's 2010 high school graduates who entered an Indiana two- or four-year public college employed three commonly used indicators of college readiness to examine their early college success: (1) enrollment in only non-remedial courses in the first semester, (2) completion of all attempted credits in the first semester, and (3) persistence into a second year of college. A key finding of the study was that,

> Although high school academic preparation and student behavior were related to [these three] indicators of college success, most of the variation in college success across students remains unexplained . . . Models based on the available data explained 35 percent or less of the variation in all of the examined indicators for students first entering a two-year college and 26 percent or less of the variation in indicators for students first entering a four-year college. (Stephan et al., 2015)

Until recently, research into college readiness tended to focus mainly on students' knowledge and skills in core academic subject areas. Increasingly, however, researchers are taking into account a much wider range of academic and nonacademic factors that contribute to college success, including intellectual habits, self-management skills, and knowledge about higher education.

Preparing Students for 21st Century College and Careers

Preparing students for 21st-century college and careers requires a new conceptual framework for K-12 curriculum,

instruction, and assessment. This framework must intentionally weave together academic and cross-cutting skills and dispositions in order to provide a more comprehensive understanding of college and career readiness and to provide a clearer direction for facilitating the readiness of all students. In other words, academic and cross-cutting skills and content must be balanced with the needs and strengths of learners. Ultimately, this will require new ways of teaching, as students must be prepared with both the cross cutting skills and intellectual tools that will enhance their practical application of core ideas. It will also call for new approaches to monitoring progress, including the use of student-centered assessments (Andrade, Huff, & Brooke, 2012). Assessments that are aligned to standards and are designed to promote growth and a growth mindset, combined with new approaches to curriculum design, have the potential to produce comprehensive information about students' deeper learning and about their true readiness for career and college (Hess et al., 2015).

Developing a Tool to Describe Successful Collegiate Learners

Successful collegiate learners are **master learners** who are focused, highly motivated, responsible, and take ownership of their own learning process. They are committed to using hard work, persistence and self-efficacy in order to successfully achieve their life vision. To facilitate their self-growth, they seek challenges, take risks, go outside of their comfort zone, embrace failures, seek feedback, and regularly engage in self-assessment. In all of their learning experiences, they prepare, actively engage, collaborate, ask

questions, think critically, and share insights, both publicly and in writing. They effectively plan, manage their time and resources, and exercise discipline in carrying out their plans. They are positive, intellectually curious, and supportive of others in team learning activities. Using higher order thinking to contextualize and generalize their knowledge, they apply what they have learned in new contexts in order to solve complex problems (Nelson et al., 2020).

The Profile of a Quality Collegiate Learner (PQCL) was developed to assist educators in identifying and developing the student characteristics most indicative of short-term and long-term success (Apple et al., 2016). The PQCL is comprised of 50 key characteristics that correlate with successful student learning performance. The key characteristics delineated in the PQCL are a result of the authors' 20+ years of experience in facilitating, assessing, and researching Learning to Learn Camps, improving learning to learn curricula, and adding to the scholarship of Process Education. These 50 key characteristics are organized into the following 10 categories of performance for successful college students:

1. **Growth Mindset (Self-Development-Oriented):** Successful collegiate learners have developed a strong belief in their current capacity. They develop a very positive and open-minded attitude towards increasing future capacity which is accomplished with feedback from others and through consistent reflection and self-assessment.

2. **Mastery Learning:** Successful collegiate learners take ownership for their learning by identifying its purpose, objectives, and performance criteria. They analyze information and models by asking critical questions. They synthesize meaning, elevate their understanding, and explore and apply their knowledge to multiple contexts. Through metacognition, they generalize their knowledge to any context.

3. **Academic Orientation: (Having an Academic Mindset):** Successful collegiate learners have established and documented academic and life goals aligned to their life vision. They consistently use resources to clarify academic and life expectations and understanding through formulating effective inquiry questions.

4. **Academic Productivity:** Successful collegiate learners come prepared to each performance. They get organized and initiate action by putting themselves fully into the challenge and maintaining focus on what they need to do.

5. **Learning Process Orientation:** Successful collegiate learners study, analyze, and improve their use of methodologies for information processing, reading, writing, problem solving, and reflecting in order to keep improving their performance in the critical processing areas that support learning.

6. **Learning Strategy Usage:** Successful collegiate learners use effective learning plans. They are assertive, inserting themselves into learning opportunities, and through hard work and collaboration with others, continue their learning until they have validated their planned outcomes.

7. **Comfort Zone Management:** Successful collegiate learners take risks. They are willing to challenge themselves to move and work outside of their comfort zone by taking risks that can lead to initial failure. They embrace failure as a frequent and productive road to success and leverage their failures for future growth. They cultivate balance and wellness and have the strength to persist until their success and growth are realized.

8. **Emotional Intelligence:** Successful collegiate learners adapt to new situations, effectively managing their frustration and anxiety. They manage their time productively and prioritize tasks. When roadblocks impede their progress, they ask for help.

9. **Social Integration:** Successful collegiate learners connect with diverse people, perform team roles effectively, converse, listen actively and speak out publicly.

10. **Professional Character:** Successful collegiate learners are disciplined in following their plans, motivated to make a difference, and confident in their actions. Through their commitment to exceeding internal and external expectations, they accept the responsibility for succeeding.

Once determined, the key characteristics and performance categories of the PQCL were then refined through a meta-analysis of student success research. The result of this meta-analysis was a profile describing a generic student who would successfully complete their first year of college at virtually any college or university. The authors then used their combined educational experience to develop an additional profile: that of a generic student just beginning their college or university experience. Following is a synopsis of each profile.

Profile I provides a normative description of students entering college. This student is less likely to persevere; uses quick strategies, unmindful of what they learn, especially regarding the role of thinking; has limited academic goals; is engaged when required, but in an unorganized manner;

learns quickly, but under prescribed structure; and when making plans to complete work, functions within a limited comfort zone to avoid failure.

Profile II describes students who successfully complete their first year of college. This student is open-minded; is a master learner, aligning academic goals with life goals and identifying and using needed resources; is academically productive; uses the learning process to attain and process information; uses planning, collaboration, and self-advocacy strategies to achieve success; and values time.

Comparing and contrasting the characteristics highlighted in these profiles can help educators define college readiness, identify what students may be lacking with respect to being ready for college, and analyze various aspects the gap between college readiness and the actual state of students: the college readiness gap. These normative profiles can assist all first-year college experience stakeholders in better understanding the students with whom they work

and thereby better facilitating the transition of those students into learners who are successful in college and in life (Apple et al., 2016).

Comparing Profiles to Determine College Readiness and Establish Educational Goals

The profiles of a student entering college (Profile I) and a successful first-year college student (Profile II) have been organized into a tool that can facilitate determination of college readiness. The *Profile Comparison Tool* incorporates the key characteristics and performance categories that comprise each student profile. Educators and/or counselors at the high school or college level can use The *Profile Comparison Tool* to ascertain which profile most closely describes a particular student or student cohort. The educator/counselor can then create a unique profile that reflects the readiness of target students for their college. This subsequent readiness profile can guide the establishment of educational goals for the student(s). The *Profile Comparison Tool* follows as Table 2.

Table 2 The Profile Comparison Tool

Key Characteristics	Profile I: Entering Student	Profile II: Successful First Year Student
Performance Category 1: Growth Mindset		
Is Open-Minded	Is open to ideas and perspectives strong opinions have not already been formed (i.e., when in novel situations)	Realizes that their thinking can always be enriched by the ideas, perspectives, and insights of others
Is Positive	Is positive primarily following a win, award, or significant external affirmation	Demonstrates positivity that is linked to the availability of opportunities, rather than merely to their outcome
Is Open to Feedback	Desires feedback in an area of expertise, major accomplishment, or new creation	Desires whatever feedback they feel can help them improve
Self-Assesses	Evaluates how well they did but with little attention on how to improve in the future	Produces meaningful self-assessment using criteria with precise observations in valuable contexts
Is Self-Efficacious	Experiences self-doubt in new situations and worries about future challenges	Believes in ability to repeat successful past performances. Believes in their capacity to do what is necessary to meet performance targets.
Performance Category 2: Mastery Learning		
Pursues Learning	Uses course study guides to aid the memorization of information for taking tests or writing papers	Uses several key steps of the Learning Process Methodology to construct knowledge
Thinks Critically	Minimizes thinking time in order to get things done more quickly	Values how they can clarify new ideas by using specific cognitive skills

Key Characteristics	Profile I: Entering Student	Profile II: Successful First Year Student
Performance Category 2: Mastery Learning *(continued)*		
Contextualizes	Only seeks out context when in familiar situations, following their previous models	Seeks out context in new areas similar to past situations
Generalizes	Can only reproduce earlier performances in the same types of situations	Has a few principles to guide progress in similar contexts
Uses Meta-cognition	Unmindful of what, why and how they learn, especially regarding role of thinking	Desires to know more about how the mind works and sometimes actively seeks better understanding
Performance Category 3: Academic Orientation		
Creates a Life Vision	Lives day to day, hoping something important comes along to support their dreams	Has thought through where they have come from, who they are, and who they want to be
Sets Goals	Mainly relies on objectives provided by others even if they may have a preferred direction for their life	Aligns short-term course goals with life goals and updates these regularly
Is Inquisitive	Limits questions to issues on the syllabus and areas of self-interest	Asks questions when they don't understand something the instructor is going to evaluate
Clarifies Expectations	When asking for clarification of instructions, seeks detailed directions	Analyzes the syllabus, looking for specifications and criteria for every assignment
Uses Resources Effectively	Minimizes the use of resources outside of class, and only as a last resort if failing	Identifies when additional resources are needed and gains some value from their use
Performance Category 4: Academic Productivity		
Is Engaged	Limits engagement to tests, classroom learning activities, or homework to be turned in	Enjoys being part of things academical, intentionally engaging on a daily basis
Is Focused	Is often distracted by the new freedom of their learning and living environment	Minimizes distractions by being purposeful in doing what needs to be done
Is Prepared	Skims reading assignments and rushes through assignments to be turned in	Meets others' expectations for readiness and rehearses critical performances
Is Organized	Misplaces resources or work products and forgets meetings and due dates	Has developed systems and checklists to ensure they have what they need, most of the time
Is a Self-Starter	Most often waits until they are told what to do	Realizes they can do more and at higher level of quality if they start work sooner rather than later
Performance Category 5: Learning Process Orientation		
Processes Information	Relies on materials provided, focuses on key resource, and limits exploration of others	With respect to obtaining specific information, they know how, when, how much, and what level of quality

Key Characteristics	Profile I: Entering Student	Profile II: Successful First Year Student
Performance Category 5: Learning Process Orientation *(continued)*		
Reads	Quickly skims to be aware, answer questions, or solve assigned problems	Uses reading logs to strengthen pre-reading techniques and quick reads to learn better
Writes	Uses prescribed structure and language to deliver what they think instructors want to read	Produces significant theses with supporting evidence and meaningful contexts
Solves Problems	Looks for a quick fix or easy solution to resolve issues; when these are not found, they give up	Appreciates that problem solving requires a degree of persistence before exploring alternatives
Reflects	Focuses on doing what is asked and, when done, moving on to the next thing	Uses a tool set to step back to make sense of cognitive, social or emotional perplexities
Performance Category 6: Learning Strategy Usage		
Plans	Quickly begin tasks once directions are given, with little thinking-before-doing	Takes time to think through the bigger projects to figure out how to meet expectations
Works Hard	Lessens workload by seeking short cuts (in time and energy) in order to finish tasks more quickly	Elevates effort when challenges require it or when being publicly reviewed
Is Collaborative	Uses others to affirm the quality of their work (compares results or answers with others)	Contributes value and modifies behaviors so that all involved benefit from the work
Validates	Seeks affirmation from the teacher or expert in order to determine if they are right/correct	Has developed a few mechanisms to know how to be sure they know something and if a solution is correct
Is Assertive	Doesn't make waves and accepts the status quo even when they know how to improve it	Knows when to step forward to help improve situations or to self-advocate
Performance Category 7: Comfort Zone Management		
Self-Challenges	Accepts challenges in an unexpressed/unarticulated intention	Seeks others who will push them outside their comfort zone for the growth it produces
Takes Risks	Avoids opportunities or challenges that could lead to embarrassment or failure	Responds positively to challenges even though they know that they may well fail
Leverages Failure	Suppresses or hides failure to avoid having to confront it or to prevent others from finding out about it	Reflects and self-assesses following a failure in order to strengthen areas that will lead to success
Persists	Gives up if they feel like a failure, or, when struggling, may project that success is unlikely	Is usually willing to continue, even when things get tough and uncertainty increases
Is Well	Has a poor diet, lack of exercise and sleep, and may use alcohol/drugs	Maintains some balance in life with attention to diet, sleep, exercise, and leisure time

Key Characteristics	Profile I: Entering Student	Profile II: Successful First Year Student
Performance Category 8: Emotional Intelligence		
Manages Time	Views time as an infinite resource and ends up doing things hurriedly at the last minute	Values time and intentionally allocates it to meet requirements, address challenges, and achieve a balanced life
Sets Priorities	Takes care things they're interested in first, putting off important activities	Puts important things first in order to meet deadlines
Asks for Help	Views reaching out as a sign of weakness, asking for help only as a last resort	Views asking for help as a strength without actually taking advantage of others
Adapts	Avoids getting into situations that would require changing behaviors and attitudes	Will change when it benefits themselves and others in the short term or in areas specifically targeted
Manages Frustration	When upset, emotionally vents and often complains, shifting fault to others	Has learned to take things in stride, relax when needed, and let some things go
Performance Category 9: Social Integration		
Is Connected	Prefers activities within a small group of friends and limiting public engagements	Seeks new experiences and activities in order to engage with new people
Is a Team Player	Unwilling to trust the work of others, fearing it could negatively affect their own accomplishments	Plays varying roles effectively to supporting team outcomes before personal outcomes
Is a Communicator	Facile with social media and electronic communication, but limits face to face communication	Listens actively and synthesizes ideas to advance conversations
Seeks Diversity	Connects with people who share similar interests, values, activities, and courses	Seeks out people with different perspectives, values, and customs in order to explore new areas or ideas
Speaks Publicly	Prefers to avoid speaking publicly; finds ways of excuse their way out. At worst, "grins and bears it."	Values their voice and the impact that their message can have on a group of people
Performance Category 10: Professional Character		
Is Self-Motivated	Constantly uses others in order to become motivated to put energy into their work	Is eager to keep developing into the person they want to become
Is Self-Confident	Often becomes emotional and underperforms because of insecurity	Values failure as a means to be more successful and is not emotionally overwhelmed when failure happens
Is Committed to Success	Only commits fully when success is certain	With mentor support, commits, even though success may not be assured
Is Responsible	Does the minimal requested; if judged harshly, blames others or the instructions	Completes assigned tasks in a timely manner, adhering to agreements made
Is Disciplined	Seeks self-gratification, deferring activities that are new or challenging	Delays fun activities that might prevent fulfilling obligations or collaborations

The Profile Tool is easily modified to meet the preferences of educators or advisors who wish to use it with target students. For example, it could be formatted so that measurers could check off student characteristics they have observed. Alternatively, it could be converted into a Likert scale, allowing a measurer to record the frequency with which a student demonstrates a particular characteristic.

Using Rubrics to Measure the Level of Student Learning Performance

Once IHE personnel have compared profiles to determine readiness gaps and to guide the establishment of educational goals for students entering and matriculating through the first year of college, it is essential that these same personnel determine the extent to which the established educational goals have been met. Doing so requires tools that effectively analyze and measure the level of learning performance at various points during students' development. Holistic and analytic rubrics can be used for this purpose, allowing educators to track and guide students as they develop into and progress toward collegiate/master learners.

Rubrics can enhance the learning process in multiple ways: They set expectations for students, provide scoring guidelines, allow for scoring transparency, improve scoring consistency, and offer opportunities for peer and self-assessment (Darling, 2016). Two general types of rubrics are available for evaluating student efforts: **holistic rubrics**, which require the measurer to score an overall learning process or product as a whole, without judging the components separately (Bargainer, 2007); and **analytic rubrics**, which require the measurer to rate the components of a process or product separately, according to specified criteria. Each aspect of learner performance that rubrics measure can be used to establish performance goals and to assess students' progress towards meeting those goals and, by extension, succeeding in college. As an example, if a rubric allows for the measurement of timeliness in submitting homework, an instructor can create a performance goal of submitting homework by the due date. Student progress over time toward meeting this performance goal can then be assessed through repeated use of the rubric.

A graphic presentation of each type of rubric — holistic and analytic — follows. As with the student profiles, these rubrics were developed utilizing the framework of the PQCL, the combined experience of the authors, and specific expertise related to Learning to Learn Camps and Academic Recovery Courses. Following each rubric is an example of how educators might interpret feedback they could then use to create appropriate student development plans and activities.

Holistic Rubric for Assessing Learner Performance Level

The following rubric provides a holistic measure of learner performance. The rubric presents five instructional **dimensions** (rows) and five **learner performance levels** (columns) that describe the type of performance a learner might exhibit and their distinguishing criteria. Students can be rated, on each instructional dimension, as reflecting one of the five learner performance levels: *trained, learned, lifelong, master,* or *self-growing.*

Example I: Analyzing the Holistic Rubric

Dimension II of the Holistic Rubric addresses "education/career mindset." This dimension refers to a student's perspective regarding general education, post-secondary or college education, and career preparation.

Trained Learners, students whose learning performance meets the criterion indicated for the trained level, would tend to do only the minimum required to obtain needed credentials. They would be most interested in achieving a particular result, rather than in the learning or instructional process required to achieve that result or to prepare for a greater result.

Master Learners, on the other hand, (i.e., students whose learning performance meets the criterion for the master level), would tend to be interested, not only in education, but in *becoming* educated. These students would be poised to go beyond the minimum requirements of a task; consequently, they would also be better able to overcome unplanned obstacles/failures of the sort they might encounter in assignments or learning projects.

A Trained Learner would approach an academic or work assignment with the idea of finishing the task as soon as possible with as little thought as possible. A Master Learner, however, would think about how the assignment fit into their overall (college) education or what the assignment would add to their understanding of their job. They would also consider how the assignment would benefit any firm or group for which they're working as a way to enhance and ensure the quality of their work on the assignment.

Analytic Rubric for Assessing Learner Performance Level

The following analytic rubric indicates how IHEs might utilize the Profile of a Qualified Collegiate Learner (PQCL) to provide a systematic measure of learner performance. Rubric developers selected four (4) of the 10 PQCL Performance Categories and their associated

Table 3 Holistic Rubric for Assessing Learner Performance Levels

<div align="center">LEARNER PERFORMANCE LEVELS</div>

	Trained (Fixed/Victim)	*Learned* (Pre-Ordained)	*Lifelong* (Seeks Mentors)	*Master* (Is Being Mentored)	*Self-Growing* (Always Seeking Growth)
INSTRUCTIONAL DIMENSION: I) PERFORMANCE					
CRITERIA	Does things that they have practiced; accepts feedback on how to do better. Needs to be taught how to do new things.	Wants to perform well in areas of expertise and seeks experts to help direct additional learning required.	Willing to be mentored to improve key performance. Actively pursues new knowledge in order to advance skills.	Values growth, using criteria & self-assessment for growth. Seeks new knowledge in order to advance performance.	Consistently improves performance by learning and elevating knowledge.
INSTRUCTIONAL DIMENSION: II) EDUCATION / CAREER MINDSET					
CRITERIA	Is basically interested in the results and not the means of education and does the minimum required to obtain credentials.	Knows the basic rules of how to play the academic game and does what they need to do to play the game well.	Values the knowledge in their areas of expertise and does what learning situations require in order to produce understanding.	Wants what colleges provide. Revisits often for more learning opportunities and is energized in these experiences.	Loves college and all it represents. Participates in many of its challenges. Thrives in pursing and sharing new knowledge.
INSTRUCTIONAL DIMENSION: III) PERFORMANCE TOOLS / METHODOLOGY					
CRITERIA	Memorizes methodologies and rigidly uses processes. Has conditioned practices that limit learning.	Has analyzed each learning process methodology and has acquired effective learning practices to support its use.	Continually works to use methodologies in order to improve performance. Routinely adds tools/techniques to increase rate of learning.	Has internalized the use of methodologies to build metacognition. Continually advances learning practices.	Has modified methodologies for stronger performance. Has developed an extensive learners' tool set which improves weekly.
INSTRUCTIONAL DIMENSION: IV) RISK-TAKING SKILLS					
CRITERIA	Steps outside of comfort zone when mentors challenge them. Willing to increase emotional health.	Accepts challenges greater than current ability, with support (especially to help them work through issues/affective problems.)	Steps outside of comfort zone when mentors challenge them. Willing to increase emotional health.	Steps outside of comfort zone when risk-rewards ratio looks favorable. Can overcome many unplanned obstacles/failures.	Seeks challenges outside of comfort zone because their growth potential and grit exceed the challenge.
INSTRUCTIONAL DIMENSION: V) COLLABORATION SKILLS					
CRITERIA	Limited in how they relate with others. Seldom are seen as someone who can be counted on not to let others down.	Accepts the requirements of engaging with others and will produce enough quality that others don't avoid future interactions.	Enjoys the opportunity to contribute and work with others. Can be depended upon to do what is needed.	Has an extensive network and works effectively in ways that make others enjoy the experience and seek additional collaborations	Integrated into multiple prominent roles in society. Viewed by others as very desirable professional with whom to work.

Learner Characteristics for incorporation into the rubric. The Learner Characteristics associated with each selected Performance Category were then described as reflective of one of five Learner Performance Levels: *trained, learned, lifelong, master,* or *self-growing.*

Example II: Utilizing the Analytic Rubric

Each Learner Characteristic in the analytic rubric can be described at five performance levels. For each Learning Characteristic, college personnel can decide what Learner Performance Level their typical entering student should have attained if they are to be successful during the first year of college. Using the analytic rubric, the college can assess a student to determine if the desired performance level has been achieved or whether the student needs some form of intervention.

For example, in Performance Category 4, Learning Productivity, for the Learner Characteristic *preparedness*, an entering student who was rated as having achieved the *trained* Learner Performance Level would routinely "wing it" and not prepare for classes. If, on the other hand, a student was rated as having achieved the *master* Learner Performance Level, the student could be expected to read, understand, and complete assignments, in other words, to "perform ably."

In either case, the student has room to improve their level of learning performance for the specified Learner Characteristic. However, in the latter scenario, the student has attained a performance level that predicts success in the first year of college; in the former scenario, the student has not attained a level that bodes well for first-year success.

The value of holistic and analytic rubrics is that they allow for a determination to be made regarding students' college readiness. Additionally, these rubrics can pinpoint students' specific need for some form of intervention. Consequently, the rubrics offer guidance regarding they types of experiences that would allow students to reach the preparedness they need for success in college.

Applying the College Readiness Tools

Table 1, Tools for Addressing College Readiness and the College Readiness Gap, provides a tabular description of how secondary and IHE personnel might use the tools described in this article. To reiterate, these tables are equally useful for secondary and IHE personnel, especially those who provide experiences prior to or during a student's first year of college, such as learning to learn camps, recovery courses, or freshman orientation programs (Apple et al., 2015; Wenner et al., 2019).

For example, secondary school personnel assisting high school students in preparing for college could use the two profiles to assess the learning capabilities students should possess if they are to be successful in their first year of college. These personnel might then reference the profiles to develop learning to learn camp experiences before students' first year of college.

IHE personnel working with students during their first year of college might use the profiles to have students assess themselves and decide on the kinds of activities that they should experience during their first year in order to better ensure their success in college. IHE personnel facilitating a course for students who have not been successful in their first year (i.e., a recovery course), might use the rubric to help students reflect on the reasons for their lack of success.

Summary

Expanding previous findings, current research on college readiness indicates the complexity of preparing students for college and careers. This research emphasizes the need for more holistic approaches to increasing college readiness and to providing development approaches that effectively prepare students for college success.

In order to identify and describe the performance gap between a typical entering college student and a first year successful college student, this article describes a profile comparison tool that can assist college personnel to (a) determine college readiness and (b) establish educational goals and strategies that support student retention and academic success. Additionally, in order to analyze learner development, the article presents a holistic and analytic rubric that can be used as measurement tools to analyze learner development at various stages. We believe these tools can assist colleges and universities in increasing their retention and graduation rates by reducing the college readiness gap, creating high quality educational objectives, pinpointing areas of needed developmental supports and, consequently, producing more able students.

Future Research

Future research should produce additional factors that explain more of the variation in student performance. Although the value of these additional factors in predicting early college success might be limited, the research could lead to more ways to close the readiness gap. Such research could take advantage of the data available from the recent Recovery Courses facilitated by the Academy of Process Educators (www.processeducation.org). Future research on college readiness should also be designed to broaden our understanding and improve the career readiness of students as they begin their upper division and discipline major courses.

Table 4 Analytic Rubric for Assessing Learner Performance in PQCL Performance Categories

PERFORMANCE CATEGORY
Learner Characteristics ➜ ➜ ➜ ➜

LEARNER PERFORMANCE LEVEL

1 GROWTH MINDSET

	Trained	Learned	Lifelong	Master	Self-Growing
	Fixed/victim	Preordained	Seeks mentors	Is being mentored	Always seeking growth
Open-Minded	Limited	Too-easily influenced	Within constraints	Seeks diversity	Synthesizes diversities
Positive	Occasionally	In interest area	In area of expertise	To improve	In all pursued areas
Open to feedback	If affirming	When necessary	If helpful	After each performance	Continuously
Self-Assesses	Limited effectiveness	If required	If really important	Regular & structured	Continuously
Self-Efficacious	Defeatist	Insecure	Some confidence	Confident in abilities	Confident and creative

LEARNER PERFORMANCE LEVEL

4 LEARNING PRODUCTIVITY

	Gets by	Minimal effort	Gets the job done	Solid performer	Superb performer
Engaged (% time)	10% - 20%	20% - 40%	40% - 60%	60% - 80%	80% - 100%
Focused	Occasionally	Sometimes	Often	Always job-ready	All of the time
Prepared	Wings it	Has basics	Adequately prepared	Performs ably	Is at the top of their game
Organized	Disorganized	Minimal structure	Adequate structure	Fully sound structure	Systemized structure
Self-Starting	Not self-starting	Starts when directed	Starts on permission	Starts when needed	Always pursues results

LEARNER PERFORMANCE LEVEL

9 SOCIAL INTEGRATION

	Limited	Small Circle	Multiple communities	Plays key role(s)	Community leader
Connected	A few close friends	Several contexts	Networks	Involves others	Networks with leaders
Team Player	Reluctant to join	Plays a few roles	Adapts to new roles	Synergistic in roles	Any role effectively
Communicator	Selective	Basic	To learn & inform	Active: listen/speak	Send & receive ideas
Seeks Diversity	Only similar culture	Tolerate cultures	Seeks new perspectives	Engages cultures	Cross-cultural
Speaks Publicly	Under duress	Rarely	Part of normal roles	To manage team	To propagate ideas

LEARNER PERFORMANCE LEVEL

10 PROFESSIONAL CHARACTER

	Needs supervision	Follows direction	Fulfills expectations	Makes & meets goals	Raises performance
Self-Motivated	Needs motivation	In interest area	Has areas of passion	Energized & ready	Marshalls engagement
Self-Confident	When practiced	Builds on success	Within profession	With new challenges	Creates challenges
Committed to Success	Not committed	If directed	In selected areas	Responsible always	Throughout processes
Responsible	If things go well	For small tasks	Meets basic outcomes	Generates success	Even w/ constraints
Disciplined	When observed	When being paid	To meet deadlines	To add productivity	Whatever is necessary

Glossary

Cross-cutting skills: Skills that allow individuals to successfully perform well in a variety of academic and workplace situations, e.g., communicating, critical thinking, working effectively in teams, problem-solving, and using technology

Growth mindset: The belief that learning performance is not fixed but can be significantly improved

Lack of college readiness: The measurable difference between the incoming students' learner capacity across the different areas and the level necessary for first year success

Risk factors: The set of identified and research reasons why students are not academically successful

Profile of a Collegiate learner: The description of the graduate of a college as a lifelong learner and self-grower to perform as a learner the rest of their life

Model of Entering College Students: This is the model of the description of the set of capacity, behaviors, and mindset that the typical incoming college student looks like.

Model of a Successful first Year Student: This is the model of the description of the set of capacity, behaviors, and mindset of successful first year students.

Performance Measure of a Collegiate Learner: This is the tool to help learners, educators and institutions to measure the level of learner capacity to determine how prepared the learner is for current and future success.

Learning to Learn Course: A Learning to Learn course develops students' ability to learn by improving their learning skills in many dimensions. Such courses can have varying lengths and disciplinary content.

Recovery Course: A Learning to Learn course developed for students who have been dismissed from college to allow them, upon successful completion of the course, to reenroll

References

Andrade, H., Huff, K. and Brooke, G. (2012). *Assessing learning. Students at the center*. Retrieved September 13, 2018 from https://studentsatthecenterhub.org/wp-content/uploads/2015/10/Exec_AndradeHuffBrooke_032312.pdf

Apple, Duncan & Ellis (2016). Key learner characteristics for academic success. *International Journal of Process Education*, *8*(1), 73. Available at http://www.ijpe.online//2016_2/2016_success2.pdf

Apple, D., Ellis, W., & Hintze, D. (2015). Learning to Learn Camps: Their History and Development. *International Journal of Process Education*. *7*(1). Available at http://www.ijpe.online/2015/camps.pdf

Bargainnier, S. (2007). Fundamentals of rubrics. In S. W. Beyerlein, C. Holmes, & D. K. Apple (Eds.), *Faculty guidebook: A comprehensive tool for improving faculty performance* (4th ed.). Lisle, IL: Pacific Crest.

Campbell, M. (2019). *College Readiness Concerns Raised by Latest Round of ACT Scores.* Bethesda, MD: Education Week. Retrieved February 12, 2020 from https://www.edweek.org/ew/articles/2019/10/30/college-readiness-concerns-raised-by-latest-round.html

Conley, D. T. (2011). *Redefining college readiness*. Eugene, OR: Educational Policy Improvement Center. Retrieved February 24, 2020 from https://www.epiconline.org/download/36913/

Darling, A. (2016) Enhance student learning through the use of rubrics. *Journal of Best Teaching Practices, 3*(1).

Farrington, C. A., Roderick, M., Allensworth, E., Nagaoka, J., Keyes, T. S., Johnson, D. W., & Beechum, N. O. (2012). *Teaching adolescents to become learners. The role of noncognitive factors in shaping school performance: A critical literature review*. Chicago: University of Chicago Consortium on Chicago School Research.

Hess, Karin, Gong, Brian & Steinitz, Rebecca (2015). *Ready for college and career? Achieving the common core standards and beyond through deeper, student-centered learning.* National Center for Improvement of Educational Assessment. Nellie Mae Education Foundation: Quincy, MA. Retrieved September 13, 2018 from https://www.nmefoundation.org/getattachment/Resources/SCL-2/Ready-for-College-and-Career/Ready-for-College-and-Career.pdf?ext=.pdf

National Research Council. (2001). *Knowing what students know: The science and design of educational assessment.* J. W. Pellegrino, N. Chudowsky, and R. Glaser (Eds.), Committee on the Foundations of Assessment. Board on Testing and Assessment, Center for Education. Division of Behavioral and Social Sciences and Education. Washington, D.C.: National Academy Press.

Nelson, T., Apple, D., Ellis, W., Leasure, D., & Kingberry, A. (2020*).* Performance descriptions: A major tool for performance development. *International Journal of Process Education, 11*(1). Available at http://www.ijpe. online/2020/descriptions.pdf

Stephan, J. L., Davis, E., Lindsay, J. & Miller, S. (2015). *Who will succeed and who will struggle? Predicting Early College Success with Indiana's Student Information System.* Washington, D.C.: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education. Retrieved July 8, 2019 from https://ies.ed.gov/ncee/edlabs/regions/midwest/pdf/REL_2015078.pdf

Toshalis, E. and Nakkula, M. J. (2012). *Motivation, engagement, and student voice. Students at the center*. Retrieved September 13, 2018 from https://studentsatthecenterhub.org/wp-content/uploads/2012/04/Exec-Toshalis-Nakkula-032312. pdf

University of Iowa, 2018. *Tracking growth towards college readiness with the Iowa Assessments*. Retrieved August 31, 2018 from https://itp.education.uiowa.edu/ia/documents/Assessment-Brief-Readiness-Final.pdf

Wenner, W., Soman, S., Stevenson, R. & Apple, D. K. (2019) Building institutional support for a recovery course for academically dismissed students. *International Journal of Process Education*, *10*(1). Available at http://www.ijpe. online//2019/recovery.pdf

(This page left intentionally blank.)