

Applying the Framework for Identifying Quality Characteristics from a Process Education Perspective

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Abstract

Quality is the most useful factor when we need to distinguish between degrees of satisfaction for different alternatives. However, essential qualities are often the hardest to identify, develop systematically, and improve, especially when it comes to education and human development. Without clear identification of the correct or most suitable characteristics of quality, the proper measurement of these characteristics and subsequent efforts to improve quality can only be conducted through trial and error. In this article, we apply a method for identifying quality characteristics derived from the world of product development to higher education through the lens of Process Education. The lens of Process Education involves the application of a template that includes three main sets of characteristics (form, function, and fit), each of which are subdivided into supporting characteristics. The use of the template is illustrated through three case studies that include facilitating learning to learn in a college course, managing enrollment in a higher education institution, and producing career-ready college graduates. The method outlined here can be applied to other contexts in higher education and beyond, producing holistic frameworks that identify essential elements of quality which may, in turn, become foci for performance measurement and effective quality improvement.

Introduction

While quality improvement and management efforts seem to be expanding in all facets of life, a universally satisfactory answer to the question, “What is quality?” is still lacking. For example, dictionary definitions (Oxford Advanced Learners Dictionary, n.d.) include:

- the standard of something when it is compared to other things like it
- a feature of somebody/something, especially one that makes them different from somebody/something else
- a high standard, excellence

For a product or a service, *quality* could have one of several meanings. According to Juran (2001), *quality* means fitness for use. According to the British Library biography on Crosby (n.d.), it means conformance to requirements, whether stated or implied. In a business context, *quality* is a measure of excellence or a state of being free from defects, deficiencies, and significant variations, a state brought about by strict and consistent commitment to certain standards that achieve uniformity of a product in order to satisfy specific customer or user requirements (Business Dictionary, n.d.).

To address the issues of defining and identifying quality in any context, a comprehensive approach was developed by El-Sayed (2018). In this approach, three areas of characteristics that describe any entity were proposed to be **form**, **function** and **fit**. The resulting model appears in Figure 1.

The **function** characteristics are health and utility. The essential characteristics associated with health were identified as robustness, maintainability, and reparability. The essential characteristics associated with utility were identified as capability, productivity, and adaptability. Function characteristics address performance under diverse operating conditions.

The **form** characteristics fall under implementation and architecture. The essential characteristics associated with implementation were identified as concurrency, continuity, and accuracy. The essential characteristics associated with architecture were identified as simplicity, modularity, and transparency. Form characteristics are process-oriented and reflect ways in which quality is built-in during product realization.

Fit characteristics were seen as more integrative and essential characteristics associated with fit were identified as profitability, manageability, and improvability. Fit characteristics exert a powerful influence on how different receivers perceive quality.

This model was presented as part of the 2016 Process Education Conference at Grand Valley State University. The model drew great interest as a tool for defining quality associated with many different aspects of higher education. Function and form labels were then adjusted and fit was subdivided into context fit and role fit. Figure 2 shows the structure of the updated model.

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Figure 1 Relationship Between Function, Form, and Fit in Product Realization

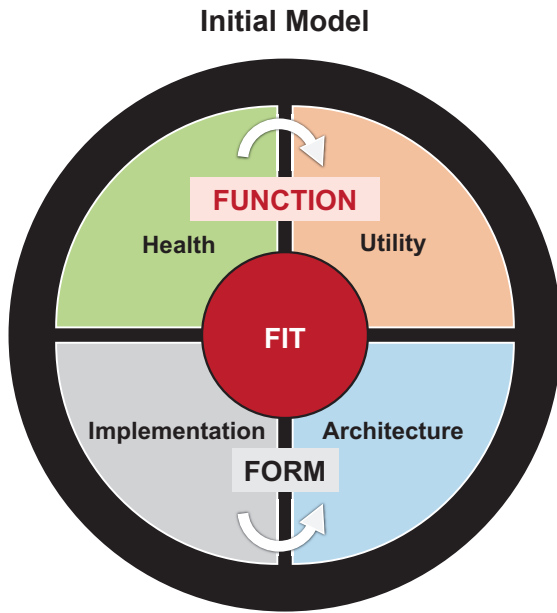
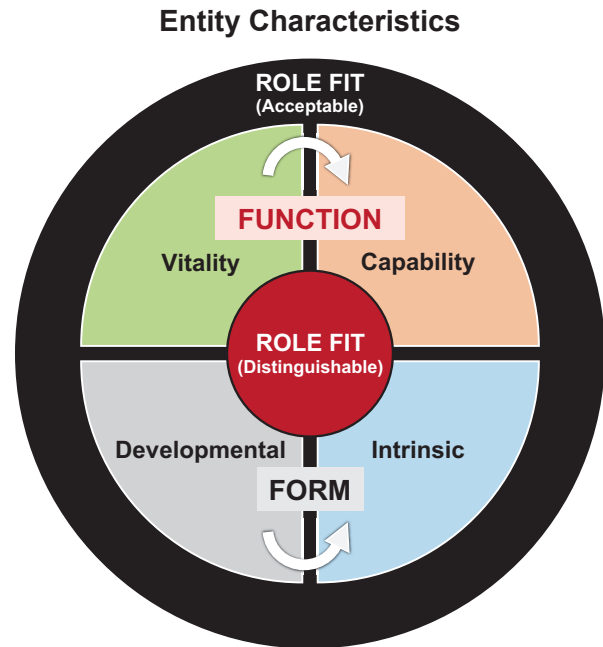


Figure 2 Model for Organizing Characteristics of Quality for Human Entities



Intrinsic characteristics were classified as cognitive, affective, and psychomotor. Developmental characteristics were classified as knowledge, skills, and attitudes. Vitality characteristics were classified as mental, emotional, and physical. Capabilities were classified as technical, interpersonal, and personal. Context fit was renamed ‘sociability’ with supporting characteristics of affordability, accessibility, and compatibility. Role fit was construed as perceived quality by different stakeholders, renamed ‘fit’, and assigned supporting characteristics of impactful, valuable, and continuable. Different characteristics shown in Figure 3 are color-coded into green (*italics*), red (**bold**), and blue (**bold italics**) to highlight the connections and relationship between the key characteristics in the different areas.

The intent of this article is to use the template shown in Figure 3 to define comprehensive, mutually exclusive attributes of quality within different contexts of higher education. Because the way of being of Process Educators includes continuous development and increased success, Process Educators can use these characteristics to continuously improve quality (Burke et al., 2009).

Method for Applying the Template

The set of guiding questions below were developed to allow for the translation of the template shown in Figure 3 to different contexts within higher education. The goal of this exercise was to replace each of the generic characteristics with context-specific characteristics that can in turn trigger brainstorming of meaningful attributes and underlying performance criteria.

1. Who is the primary receiver of quality in this context?
2. What are the distinctive contextual elements in which quality is produced?
3. What is necessary to sustain current individual or system capability in this context?
4. What is the essence of the underlying educational structure associated with this context?
6. How do you advance quality using the underlying educational structure?
7. How does the primary receiver in this context perceive different aspects of ‘fit’?
8. Can resulting characteristics be refined to apply to a broader pool of receivers and cultures?

A natural order for synthesizing answers to these questions and populating the quality framework is given in Table 1.

Case Study #1 (performance):

Applying the Framework to a Facilitation

Step 1: Capability: This is the current picture of performance. The first thing that the receiver will look at is the technical competence of the performer. Two additional characteristics that influence technical competence are **interpersonal skills** and **personal well-being**. Interpersonal skills are at the heart of performance because performance is always socially-based. The personal element is how the individual handles the performance context with all its performance demands (Leasure et al., 2020).

Figure 3 Quality Framework for Entities in Higher Education (template)

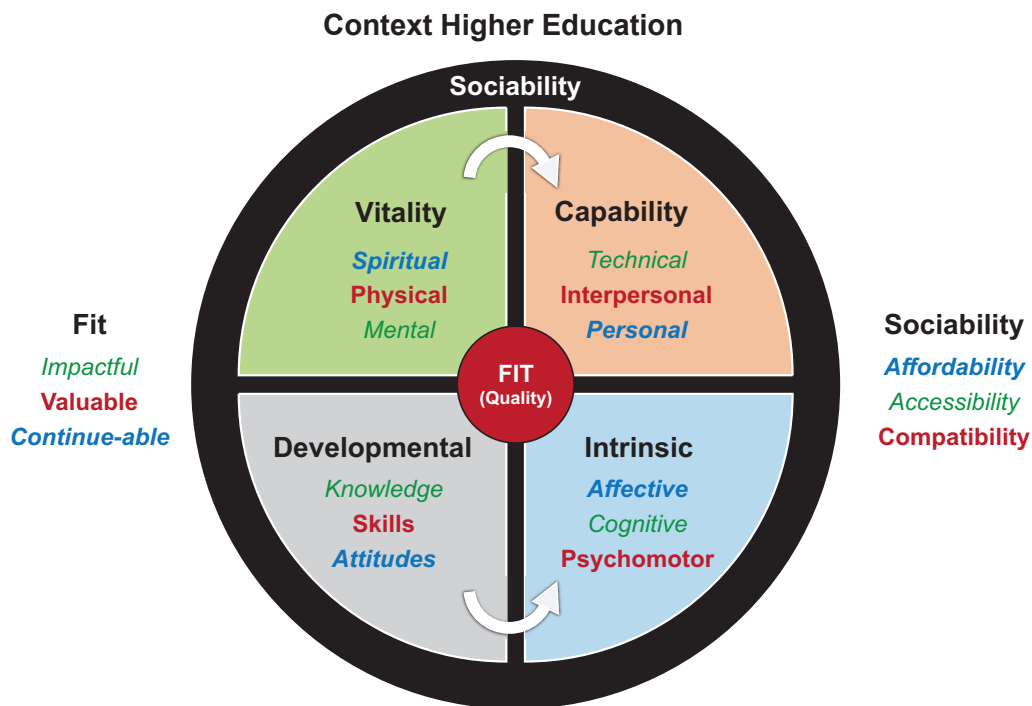


Table 1 Sequence for Populating the Quality Framework for a Specific Context

Step	Element of Framework	Notes
1	Capability	Visualizes current performance
2	Vitality	Addresses what is needed to sustain performance
3	Intrinsic	Identifies learning skills used by the performer(s)
4	Development	Outlines potential for transformation of performance
5	Fit	Defines value added to receivers of performance
6	Sociability	Explores alignment with wider culture/norms

Step 2: Vitality: Once a capability is generated, it is important that performance not degrade. The most important aspect is for the performer to retain passion (e.g., spiritual connection) surrounding the performance area such that all aspects of oneself are constantly engaged in the performance while it is occurring (Leasure et al., 2020). The mind (especially one’s mindset) is critical to staying sharp and focused on capabilities associated with the desired quality. Since the body is human and is very important for any performance, it is important to keep the body at a peak capability that includes a desire for well-being and maintaining physical fitness.

Step 3: Intrinsic: The characteristics here are the inherent skills sought from the classification of learning skills (Leise et al. 2019) that comprise the source of the performer’s strength. Often the most important skill area is the affective domain because skills such as efficacy, confidence, and risk-taking are so critical in performance development. Next most important are the cognitive skills because of how important the mind is in mediating one’s actions while engaged in any performance area. In many performance areas, the psychomotor skills are equally instrumental in helping the body perform at required (and potentially high) levels of physical exertion.

Step 4: Developmental: Here is the place and opportunity for Process Educators to engage in performance development (Apple et al., 2018). The transformational learning that is foundational to the philosophy of Process Education is focused on changing the mindset and identity of the learners (performers). This is accomplished by the strengthening of the existing intrinsic ability of the performer in the direction of the desired capability. This alignment is critical. The learning and building of working expertise in the performance area helps to increase the intrinsic power of the performer. The choice and development of which learning skills are most applicable in the cognitive, social, affective, psychomotor, and quality domains will strengthen the intrinsic power, overall capability, and vitality of the performer.

Step 5: Fit: What remains is determining the quality of fit to the receiver. The set of characteristics of quality, both current and future, are situated in the context and its quality of fit determined. First and foremost, we must ask if the performance impacts the receiver. From there, the magnitude of value the receiver obtained from the performance must be determined. Finally, it must be ascertained if this impact will continue. Because the perception of quality will vary among the different receivers it is important to align the performer, the performance, and the receiver with respect to the same characteristics of quality (Leasure et al., 2020).

Step 6: Sociability: Once the fit among the potential receivers is established, there is a determination of how well it fits within the greater society. Not only must the receiver value the quality produced, but the receiver is influenced by family, friends, acquaintances, media, etc. The outcomes associated with the performance must be satisfactory to others, otherwise, they will apply pressure against it. The performer must have access to receive performance preparation based upon factors such as location, means, situation, and timing. Finally, the performer must have credentials that are compatible with the performance context.

Due to the importance of facilitating learning to learn in college courses, the framework shown in Figure 4 was developed to identify top characteristics of a learning to learn facilitator. For each generic characteristic associated with the steps outlined in Table 1, a central Process Education characteristic was selected that applies to the context under study.

For **capability**, *facilitation of learning to learn* is selected as the top technical characteristic. This includes thoughtful use of the facilitation methodology (Smith

& Apple, 2007). *Mentoring* is selected as the top interpersonal characteristic and *(being a) self-grower* is selected as the top personal characteristic.

For **vitality**, *(being) passionate* is selected as the top spiritual characteristic because modeling the congruency of one's actions with one's personal identity can be a powerful force in developing the identity of others. *Reflection* is selected as the top mental characteristic; private and public processing of lessons learned is a valuable summative activity in learning as well as personal development. *Endurance* is selected as the top physical characteristic as the ability to maintain the level of emotional and mental sustainability over extended periods of intensity requires stamina.

For **intrinsic**, *having an instructor who is emotionally connected* is selected as the top affective characteristic. This is vital because students are known to be responsive to faculty concern for students' personal well-being (Apple & Smith, 2007). *Real-time thinker* is selected as the top cognitive characteristic; being attentive to what is transpiring in the classroom and the ability to improvise underlies the creation of teachable moments (Sweeney et al., 2018). *Being physically strong* is selected as the top psychomotor characteristic because the ability to rapidly navigate the classroom, stand by listening to student discussions, and project one's voice are necessary when working to infuse energy into the classroom.

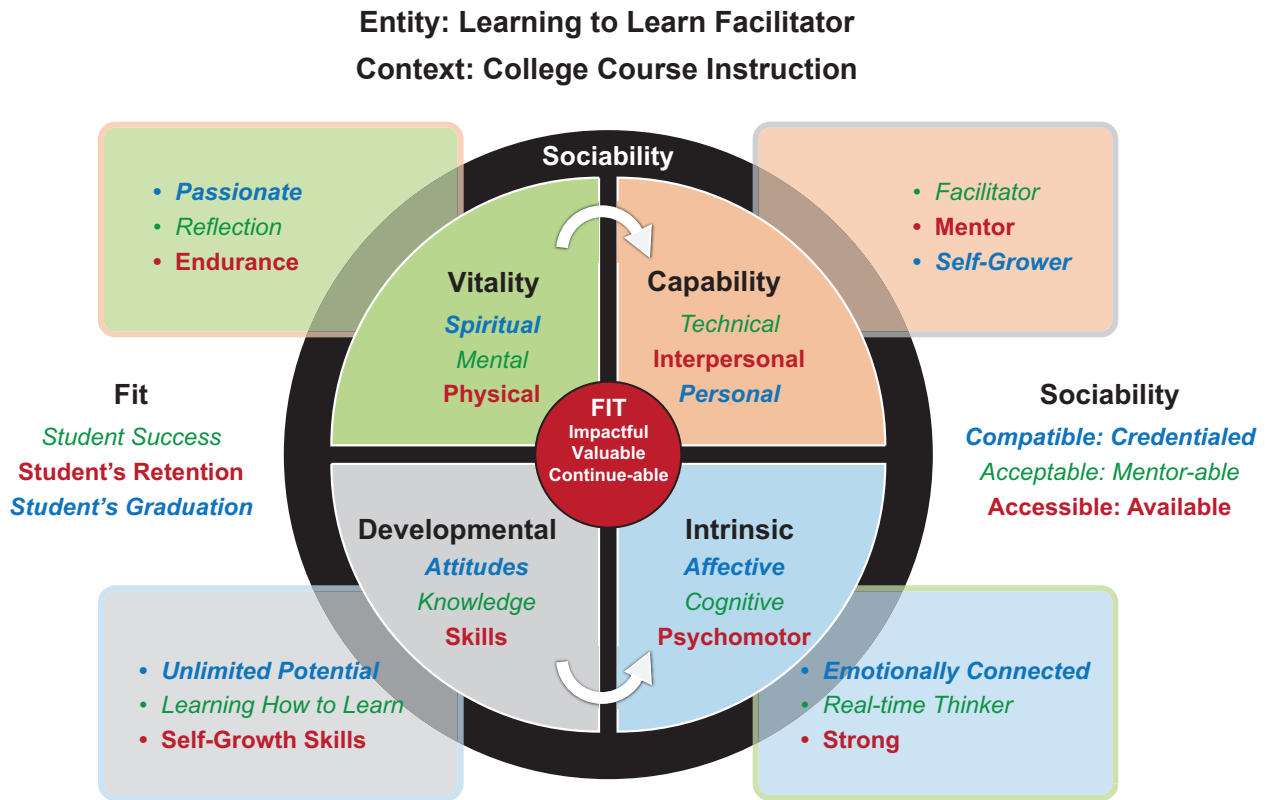
For **developmental**, *belief in unlimited potential* is selected as the top characteristic for the area of attitudes. A growth mindset is central to the philosophy of Process Education (Burke et al., 2009). *Having knowledge about learning how to learn* is selected as the top characteristic for the area of knowledge which includes mastery of the learning process methodology (Watts, 2018). *Having the skill of self-growth* is selected as the top characteristic for the area of skills (Apple et al., 2018).

For **fit**, student success, retention, and path toward graduation are selected as key quality characteristics. These are realized over a longer time scale, but these results accrue through systematic application of high-impact teaching/learning practices.

For **sociability**, being amenable to mentoring, available, and credentialed are selected as key characteristics. These address issues of openness to professional development, accessibility inside as well as outside class, and reputation within a disciplinary community.

In the selection of potential learning to learn facilitators by a college for a learning to learn course or a recovery course, the 18 characteristics described in the boxes that

Figure 4 Quality Framework – Learning to Learn Facilitation in the Context of a Course



surround Figure 4 can be used for identifying the most promising candidates and potential stars in facilitating student success. Centers for Teaching and Learning can also use these characteristics for designing their programming, conducting faculty development events, and certifying faculty. Finally, a faculty member can use these characteristics in selecting focus areas for self-development and the kind of portfolio-building that colleges value.

**Case Study #2 (organization):
Applying the Framework to a College**

Moving from a familiar context of classroom performance (where Process Education has its origins), we next consider the similar context of an educational organization. What follows is the results of the same thinking process used in Case Study #1 but this time we test the feasibility of the framework realization process to see how well the standard prompts apply to an entire educational institution.

Step 1: Capability: This is the picture of an educational organization that is seen by regional accreditation teams in their efforts to certify colleges and universities. The first thing an accrediting body looks at is the organization's technical competence. From this, the organizations strength is determined vis-à-vis accreditation standards. Two additional characteristics that influence the capabil-

ity of a college are its interpersonal climate/culture and the internal capability of its faculty, staff, and students.

Step 2: Vitality: Similar to individuals, organizations also need to take thoughtful actions that sustain their capability. The most important aspect is to retain its spiritual connection with its alumni, employees, and other stakeholders. This is often communicated in terms of vision, mission, and values. Organizational knowledge, learning, and experiences must be captured and integrated so that the loss of any individual doesn't detract from the ability of the organization. Since educational infrastructure is generally linked to the identity of an organization, it is important to make appropriate investments in maintaining current facility, adding new faculty, and endowments.

Step 3: Intrinsic: Campuses can be said to have an affective environment and these environments are usually obvious to current as well prospective students. We represent this in terms of the efficacy of past, present, and future students in responding to life challenges. The level of opportunity and challenge associated with student learning and growth is a point of distinction in the design and delivery of programs. These could include special emphasis on international programs, internships/co-ops, undergraduate research, honors, and service learning. Lastly, there is stewardship of informa-

tion and social networking that brings together stakeholders who can support and take advantage of these opportunities.

Step 4: Developmental: Knowledge of high-impact practices for advancing learning and scholarship lie at the foundation of an institution’s ability to reinvent itself (Association of American Colleges & Universities, n.d.). Capacity for ongoing personal/professional development is also a catalyzing agent (POD, 2019). With advancements in Process Education that focus on the concept and practice of self-growth, development must include that of students, faculty, and staff into self-growers (Kegan & Lahey, 2016). Finally, commitment to transforming the landscape for teaching/learning to meet changing disciplinary expectations, changing student populations, and emergence of new instructional technologies generates the creative tension that is needed to engage in new initiatives.

Step 5: Fit: Impact is felt during the educational experience as well as in smooth transition to the workplace and the broader community following graduation. Over time, resulting economic and social contributions should increase. Finally, to keep pace with technological advancements and disruptive innovations, the ability to engage in lifelong learning and continue the process of self-growth is expected.

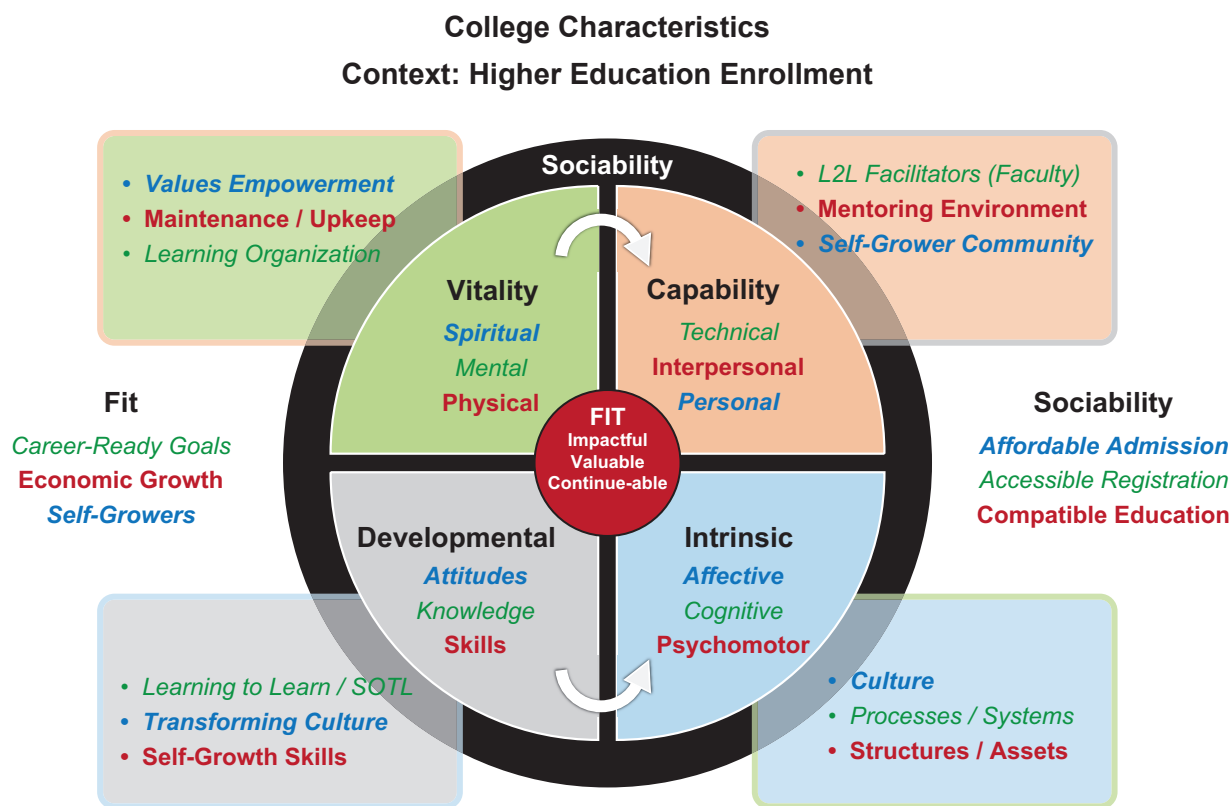
Step 6: Sociability: Lifetime value received as accounting for debt accrued, is a top priority for parents and students alike. Nondiscrimination and fairness are embedded in the process of extending educational opportunities to a wide population of prospective students. Current and responsive program objectives address knowledge sets and skills needed by regional partners. Evidence of student outcomes that support these objectives is the engine for continued institutional support.

A top concern of most higher education institutions is enrollment management and placement of students. This is a function of recruiting, retention, and performance of graduates. The method outlined in Table 1 was applied within this context to derive the framework shown in Figure 5.

For **capability**, *learning to learn facilitation of the faculty* is selected as the top technical characteristic. The *mentoring environment of campus* is selected as the top interpersonal characteristic. A *community of self-growers* was selected as the personal characteristic.

For **vitality**, *values empowerment of the college* is selected as the top spiritual characteristic. *Maintenance/upkeep of facilities* is selected as the top physical characteristic. *Maintaining a learning organization* is selected as the top characteristic for the area of mental.

Figure 5 Quality Framework – A College’s Enrollment



For **intrinsic**, the *college culture* is selected as a top affective characteristic. *Processes/systems* is selected as the top cognitive characteristic. *College physical structures and physical assets* is selected as the top psychomotor characteristic.

For **developmental**, *learning to learn/scholarship of teaching and learning* is selected as the top knowledge characteristic. The *learners' self-growth* is selected as the top characteristic for the area of skills. *Transforming culture* is selected as the top college characteristic for the area of attitudes.

For **fit**, *career-ready graduates*, *economic growth for the community*, and *self-growing alumni* are selected as the key quality characteristics.

For **sociability**, characteristics of *affordable admission*, *accessible registration*, and *compatible education* (with workforce/community needs) are selected.

The characteristics shown in Figure 5 represent primary concerns of current, past, and prospective students. They are also relevant in faculty/staff hiring and retention as well as institutional oversight by governing bodies. The framework can be used to compare/contrast different college options, to consider alternative transfer institutions, to energize faculty/staff/alumni, and to stimulate relationships with institutional partners (business, gov-

ernmental entities, and non-profit organizations). All of the characteristics are vital in institutional storytelling and branding about current operations as well as prioritization of competing institutional initiatives.

Case Study #3 (individual):

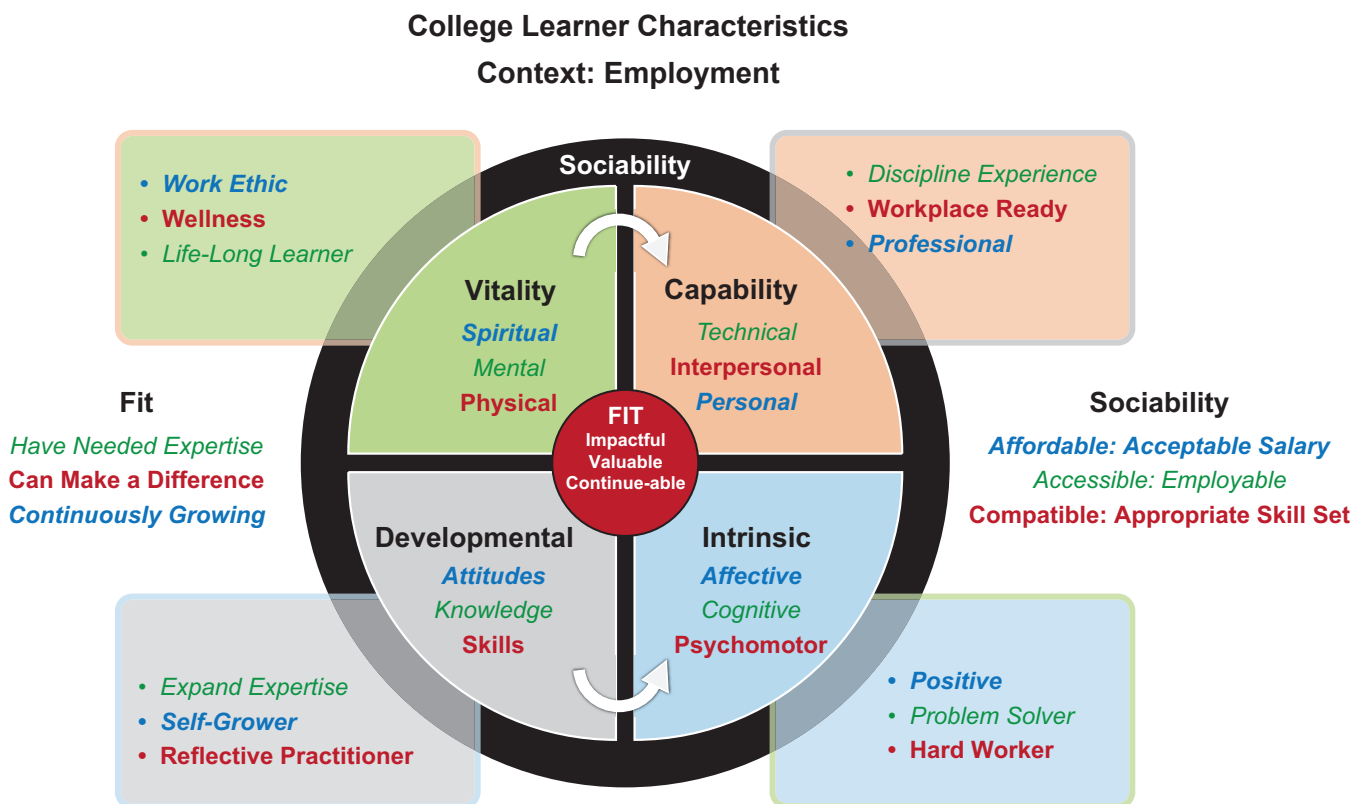
Applying the Framework to a College Graduate

Considering that student success is a continuous pursuit of Process Education and the main goal for higher education, we next focus on the establishment and utility of a quality framework for the top characteristics of a collegiate learner. The context for this case study is employability following graduation. The process used for this object type (individual) as well as eight additional object types not in the article was found to be congruent with steps 1 – 6 used in the case studies #1 and #2. Figure 6 shows the result of this analysis.

For **capability**, *discipline expertise* is selected as the top technical characteristic. *Workplace readiness* is selected as the top interpersonal characteristic. *Professional behavior* is selected as the top characteristic for the area of personal.

For **vitality**, *a strong work ethic* is selected as the top spiritual characteristic. *Physical health and wellness* are selected as the top physical characteristic. *Life-long learner* is selected as the top characteristic for the area of mental.

Figure 6 Quality Framework – College Graduate Readiness for Employment



For **intrinsic**, *being positive* is selected as the top affective characteristic. *Being a problem solver* is selected as the top cognitive characteristic. *Being a hard worker* is selected as the top psychomotor characteristic.

For **developmental**, *expanding expertise* is selected as the top characteristic for the area of knowledge. *Being a reflective practitioner* is selected as the top characteristic for the area of skills development. *Self-grower* is selected as the top characteristic for the area of attitudes.

For **fit**, *having needed expertise, the ability to make a difference, and continuously growing* are selected as the key characteristics.

For **sociability** the characteristics of *acceptable salary, employability, and having an appropriate skill set* are selected.

In order to verify the utility of the quality framework shown in Figure 6, we compare it with the characteristics in the Profile of a Quality Collegiate Learner (PQCL) as presented by Apple, Duncan, and Ellis (2016). The PQCL characteristics are organized into seven performance categories: (1) growth mindset, (2) academic mindset, (3) learning processes, (4) learning strategies, (5) affective learning skills, (6) social learning skills, and (7) productive academic behaviors. The main goal of the profile “is to assist colleges in determining the characteristics that must be developed to increase their student success and employability”. To show alignment between the PQCL and Figure 6, the seven categories of the PQCL characteristics are mapped as inputs to the three developmental subsets of knowledge, skills, and attitudes. This alignment is shown in Figure 7.

Figure 7 uses color coding to show the elements of the PQCL that relate to knowledge, skills, and attitudes. Each of these elements contains three sets of characteristics. The developmental area of knowledge contains the learning processes, learning strategies, and productive academic behavior (knowledge component). The developmental area of skills contains the affective learning skills, the social learning skills, and productive academic behavior (skills component). The developmental area of attitudes contains the growth mindset, the academic mindset, and the productive academic behavior (mindset component). For each of the nine developmental characteristics, the targeted intrinsic characteristics areas (cognitive, affective, or psychomotor) and the targeted capability and vitality characteristics are identified within the parentheses using labels as well as a color code.

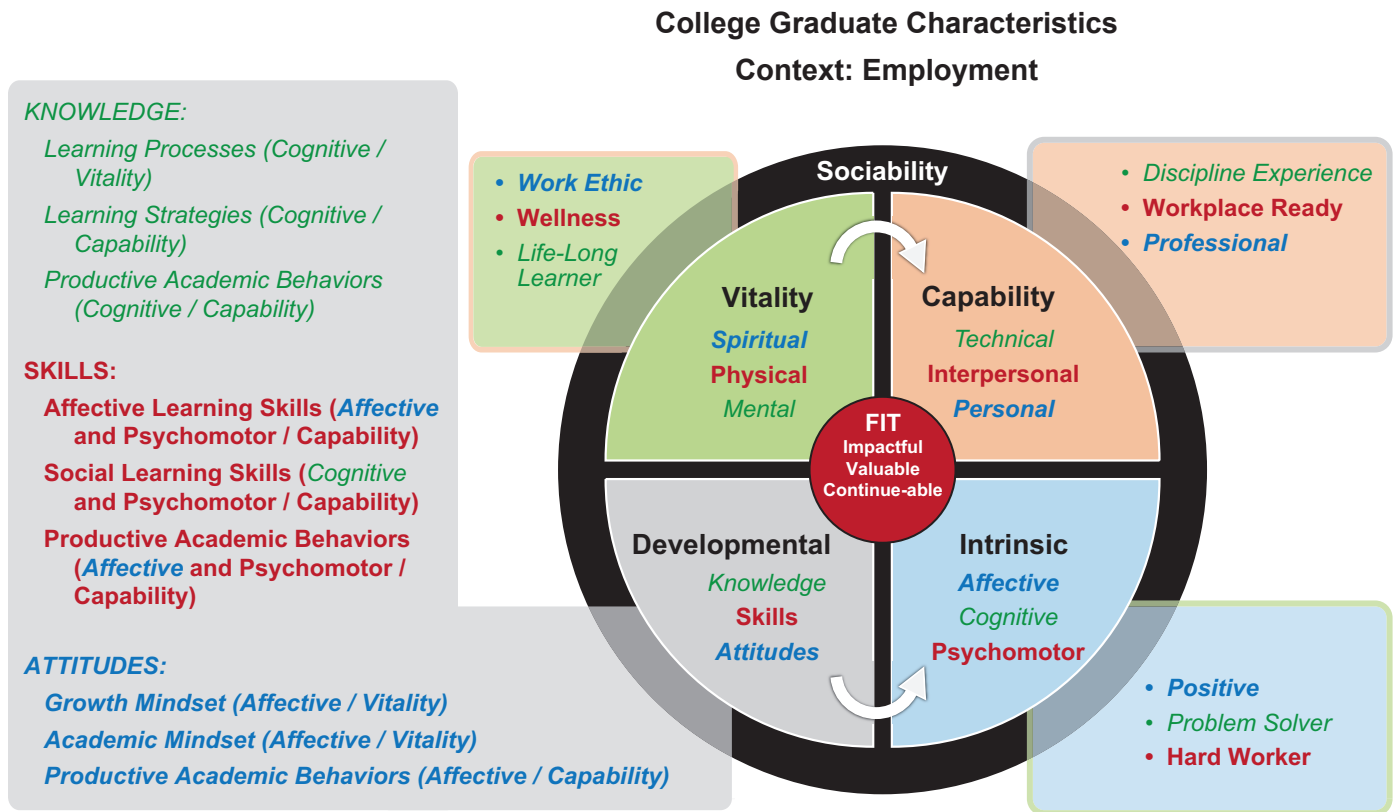
Looking more closely, the productive academic behaviors in the PQCL are subdivided into those that corre-

spond to knowledge, skills, and attitudes. Through the development of learning processes, learning strategies, and productive academic behaviors (knowledge component) the intrinsic cognitive area is enhanced. The development of growth and academic mindsets, increasing productive academic behaviors (both mindset and skills components), and developing affective learning skills all contribute to the intrinsic affective area. The development of the affective, social and productive academic behaviors (skills components) all contribute to the intrinsic psychomotor area. In turn, the intrinsic affective, cognitive and psychomotor areas improve technical, interpersonal, and personal capabilities as well as physical, mental and spiritual elements of vitality.

Conclusions

Measuring, developing, or improving quality necessitates the clear identification of the underlying characteristics of quality. To this end, this article applied and explored a framework for identifying quality characteristics in higher education using principles and concepts from Process Education. The case studies illustrate the versatility of the framework and general methodology in defining quality for a performance, an organization, and an individual. Moreover, the quality framework approach was found to be in alignment with the Profile of a Quality Collegiate Learner (PQCL) and thus underscores its selected characteristics for student success. Further, the quality framework approach provides potential insight about the inter-relationship of these characteristics of student success. The template, and its associated prompts, given in Figure 3 is therefore found to be broadly applicable to different higher education entities and contexts and a useful tool for streamlining quality development time and improvement efforts.

Figure 7 Quality Framework of College Learner — PQCL Developmental Characteristics



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