

Concept Maps for Linking Aspects in the Transformation of Education

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Abstract

In previous IJPE scholarship, fourteen aspects were identified as mediators of quality in teaching/learning in higher education. These were derived from more than ten years of teaching institute observations, peer coaching sessions, and classroom self-assessments. The aspects highlight challenges that can be embraced to enrich educational experience, or ignored, to perpetuate the status quo. As a group, these aspects are overwhelming without a framework for addressing them within a larger instructional system. This work offers a set of three concept maps that cluster the aspects based on natural affinity as well as natural order of implementation. Each aspect was placed under one of four broad categories: epistemology of teaching/learning, course design for learning, facilitation for learning, and assessment for learning. Separate maps were then constructed using the aspects as well as other elements of classroom instruction to illustrate differences between traditional, transitional, and transformational teaching/learning environments. Once the maps were created, educator ways of being and common teaching and learning toolkits became obvious from each map. The set of concept maps is customized for instructors, rather than learners, to help them better visualize their personal teaching/learning practices and their local teaching/learning culture on the continuum from traditional to transformational environments. These new resources are expected to lay the foundation for a next-generation Faculty Guidebook resource as well as tools to measure educator performance and activities that promote professional growth within the three different teaching/learning environments.

Introduction

The *Faculty Guidebook* project was initiated more than ten years ago to help faculty, staff, and administrators define and synergistically develop teaching/learning practices congruent with Process Education™ (Beyerlein, Holmes & Apple, 2007). The goal of this effort was to refine the definitions of Process Education, the profile of a process educator, and the principles of Process Education, and to connect them with the educational theory and research-based best practices in teaching and learning. Figure 1 gives the current definition of Process Education that was ratified at the first general meeting of the Academy of Process Educators in 2007. Figure 2 gives the profile of a process educator that also appears on a quick reference card supplied with many Pacific Crest faculty development handbooks. Both of these appear on the main page of the Academy of Process Educators website (Academy of Process Educators, 2012). Figure 3 outlines the ten principles of Process Education that were articulated in the inaugural issue of the IJPE (Burke, Lawrence, El-Sayed & Apple, 2009).

Figure 1 Definition of Process Education

Process Education is a performance-based philosophy of education which integrates many different educational theories, processes, and tools in emphasizing the continuous development of learning skills through the use of assessment principles in order to produce learner self-development.

Figure 2 Profile of a process educator

A Process Educator...

- trusts and respects students
- wants to see growth in others
- can handle and adapt to change
- enjoys collaboration and teamwork
- has the desire to be a self-grower
- is willing to shift control to students
- uses time efficiently and effectively
- is willing to innovate and experiment
- enjoys assessment and is open to feedback
- utilizes self-assessment to improve performance

Figure 3 Principles of Process Education

1. Every learner can learn better, regardless of the current level of achievement; one's potential is not limited by current ability.
2. Although everyone requires help with learning at times, the goal is to become a capable, self-sufficient, lifelong learner.
3. An empowered learner is one who uses learning processes and self-assessment to improve future performance.
4. Educators should assess students regularly by measuring accomplishments, modeling assessment processes, providing timely feedback, and helping students improve their self-assessment skills.

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5. Faculty must fully accept the responsibility for facilitating student success.
6. To develop expertise in a discipline, a learner must develop a specific knowledge base in that field, but also acquire generic, lifelong learning skills that relate to all disciplines.
7. In a quality learning environment, facilitators of learning (teachers) focus on improving specific learning skills through timely, appropriate, and constructive interventions.
8. Mentors use specific methodologies that model the steps or activities they expect students to use in achieving their own learning goals.
9. An educational institution can continually improve its effectiveness in producing stronger learning outcomes in several ways: (1) By aligning institutional, course, and program objectives; (2) By investing in faculty development, curricular innovation, and design of performance measures; (3) By embracing an assessment culture.
10. A process educator can continuously improve the concepts, processes, and tools used by doing active observation and research in the classroom.

The *Faculty Guidebook* project ultimately produced more than 140 2-page and 4-page modules anchored in the educational literature and written with a reflective practitioner mindset. Many of these modules provided guidance on using specific tools/methods that improved learning outcomes by focusing on the process of learning itself. Module topics were grouped into four broad areas and parsed into chapters within four distinct sections of the *Guidebook*—institutional development, intellectual development, learner development, and self-development. Professional development was embedded within each of these sections rather than treated as a fifth section of the *Guidebook*. This organizational scheme for accessing modules was sensible and reasonably effective in helping users access and navigate the scholarship in the 500+ page *Faculty Guidebook*, even though the scheme was devised after many of the modules had been written.

The *Faculty Guidebook* used a single graphic in the form of a “compass” to serve as a pathfinder for teaching and learning knowledge and methodologies contained in modules written by more than 40 authors who came from diverse institutions and disciplines. This graphic acknowledges key stakeholders (students, faculty, and institutions), identifies five faculty roles as “points” of engagement (intellectual development, learner development, self-development, professional development, and institutional development), features a unifying ring of core teaching/learning processes (assessing, collaborat-

ing, designing, evaluating, facilitating, leading, learning, measuring, mentoring, problem-solving, researching, and teaching), and situates teaching/learning within local cultural characteristics. The Compass of Higher Education (Pacific Crest, 2012) was adopted by authors in the inaugural issue of the *International Journal of Process Education* as a universal system diagram for describing Process Education (Burke, K. et al, 2009).

As *Faculty Guidebook* readings were used more and more extensively as background for faculty development events, especially those facilitated by Pacific Crest, common themes emerged that seemed to impose a glass ceiling on personal and system performance. These were ultimately expressed in the fourteen aspects defined in Figure 4 (Hintze-Yates, Beyerlein, Apple & Holmes, 2011). Each of the aspects evokes an educator response somewhere between a position reflective of historical tendencies in education (“red”) and a position reflective of ever-more-promising and effective directions in education (“green”). Early peer review by practitioners of Process Education recognized that the aspects were interdependent and suggested inclusion of a “yellow” position between the “red” and “green” to serve as a guidepost for personal and organizational development. A learning object was created to present characteristics, cultural pressures, faculty behaviors, and student behaviors associated with a “red” and “green” approach to each of the aspects (www.transformation-of-education.com). Tips and relevant *Faculty Guidebook* modules were also provided to help facilitate movement from a red approach to a green approach within each of the aspects. It was decided to list the aspects alphabetically rather than to hastily suggest another grouping method that might later be deemed ill-considered and would be inconvenient to unravel.

Figure 4 14 Aspects in the Transformation of Education along with their definitions

ASPECT and DEFINITION

Challenge

The degree to which increasing the level of difficulty is used in order to grow capacity for learning and performing

Cognitive Complexity

The degree to which training and doing is elevated to problem solving and research

Control

The locus of power/authority for the learning situation or experience

Delivery

The means by which information/knowledge is obtained by learners

Design

The purposeful arrangement of instructional environment, materials, and experiences to support learning

Efficacy

The well-founded belief in one's capacity to change and to make a difference

Feedback

Information about what was observed in a performance or work product

Measurement

The process of determining the level of quality of a performance or product

Ownership

The degree to which the learner accepts responsibility and accountability for achieving learning outcomes

Relationship

The degree of emotional investment an instructor or mentor has in his or her students or mentees

Scope of Learning

The contexts across which learning occurs and its application is demonstrated

Self-Awareness

The degree to which reflective and self-assessment practices are used by the individual to foster the growth of his or her learning skills across the cognitive, affective, and social domains

Social Orientation

The investment, interdependence, and responsibility for learning throughout a community

Transparency

The degree to which stakeholders can view individual, team, or collective performances

While great enthusiasm surrounded exploration of the Transformation of Education learning object, there remained questions about how to use the aspects to navigate the journey from “red” to “yellow” to “green.” As such, the following research questions motivated the current work.

- Can the 14 aspects be combined in a meaningful teaching/learning system that provides or allows for insight about the growth of a process educator from a traditional world of largely “red” practices to a future world of largely “green” practices?
- What is the optimal method for representing this system so that educators at all levels of proficiency with Process Education, novice to expert, can derive value through its use?

- What additional elements are necessary for creation of a coherent and compelling representation? What changes, if any, are needed in the fourteen aspects themselves?

Methodology

Several tools were considered as aids for studying and for interrogating the relationship between the 14 aspects in teaching/learning. Venn diagrams communicate similarities and differences between different sets of ideas. Flowcharts communicate the sequencing of steps in a methodology subject to logical conditions. Prerequisite tables portray intermediate objectives or mediating conditions needed for specific actions to begin. Concept maps label key concepts as well as contexts, link them with prepositional phrases that form propositions that communicate higher-order meaning, place primary and secondary concepts within a spatial or temporal hierarchy, and use cross-links to communicate how concepts in one domain of the map is related to concepts in other domains. Concept maps were selected for use in this work because they were perceived to possess the richest semantic meaning and to be the most contextually pliable.

A centering feature of concept maps is a focus question that pertains to a situation or event presumably faced by the user. Concept maps were originally conceived as a way to understand changes in cognitive development of children’s scientific knowledge, and have since been used in many different situations to interrogate cognitive structure held by both individuals and groups. Concept maps allow for different people to bring different prior knowledge to the same teaching/learning situation, and this produces different levels of understanding that can result depending on the depth at which users reflect on the propositional knowledge contained within a concept map. As such, concept maps are recognized for their ability to provide scaffolding for guided discovery as well as self-assessment. The methodology summarized in Figure 5 was derived from guidelines by Novak and Cañas (2008) and was used in constructing the concept map presented in this work.

Figure 5 Methodology for constructing concept maps

1. Begin with a domain of knowledge that is very familiar to the authors of the concept map.
2. Select a particular context for applying this knowledge.
3. Formulate a focus question that frames the problem or issue that the map is intended to resolve or inform.
4. Identify 15-25 key concepts and contextual elements associated with this knowledge.

5. Rank-order the list of elements from the most general to the most specific.
6. Retain potential map elements in a “parking lot” until they can be integrated in the map.
7. Construct a preliminary concept map (with concept and context labels, linking prepositions, and strategic cross-links).
8. Analyze elements in the parking lot to determine whether they should be added or exchanged with elements in the map to enhance its clarity or its meaning. This includes identifying additional labels that are needed but were not in the original parking lot.
9. Review and revise the concept map—its underlying focus question, concept labels, links, and cross-links—based on feedback from peer-assessment and self-assessment.
10. Format the concept map in the manner and medium that will promote its best use.

Alignment between steps 1, 2, and 3 lays the foundation for an effective concept map. Thoughtfully reviewing relevant literature in steps 4, 5, 6, and 7 validates that a robust set of concept labels and linking prepositions are present in the map. Planning multiple rounds of assessment by authors and anticipated users in steps 8, 9, and 10 improves the utility of the final product. Careful attention was given to all three of these activities in this work.

Concept Map Development

The author team consists of two past presidents of the Academy of Process Educators and an educational consultant with experience creating and preparing professional development materials for Process Education workshops and institutes. All authors were

also involved in the *Faculty Guidebook* project and regularly use as well as contribute to the *International Journal of Process Education*. The knowledge domain for this mapping exercise includes beliefs, tools, and techniques about which faculty make choices in the teaching/learning environment. In particular, the finished map should convey the landscape in which collegiate education ideally occurs as mediated by interaction of the 14 aspects of the Transformation of Education. The map should stimulate awareness as well as reflection about the structure of teaching and learning as it is currently practiced as well as how it could be practiced in an ideal world. The intended audience is any faculty or staff member, regardless of teaching/learning experience or current skill level.

The context for our concept mapping, therefore, is teaching/learning within a collegiate degree program. While our mapping can provide insight about teaching/learning in other contexts, including pre-college settings, parenting, team-based problem-solving, product development, graduate research, and educational leadership, it was not specifically designed to do so. Additionally, the concept mapping was undertaken to illuminate the role of instructors rather than the experience of students. There are many map features that will resonate with students, but there are also instructional responsibilities embedded in the maps which could be foreign to students who have not had first-hand experience as teaching assistants or peer mentors. Finally, the authors suspected that linkages between the aspects could change significantly between traditional (RED) and transformational (GREEN) teaching/learning environments. As such, they recognized that they probably needed to treat these as separate systems. The following focus question was selected to guide overall concept map development ultimately leading to deeper understanding of the GREEN environment.

Figure 6 Position of aspects (shown in CAPS) based on content, process, and natural order in teaching/learning

	Content	Process	Both Content & Process
Primary	SCOPE OF LEARNING	CONTROL DELIVERY FEEDBACK OWNERSHIP RELATIONSHIP TRANSPARENCY	
Secondary	COGNITIVE COMPLEXITY	SOCIAL ORIENTATION	CHALLENGE DESIGN EFFICACY MEASUREMENT SELF-AWARENESS

How do the 14 aspects in the Transformation of Education interact within a system of teaching/learning that informs the emerging way of being of a process educator?

To begin, the 14 aspects were classified based on their association with content knowledge, process knowledge, or both. They were further subdivided into those aspects which were primary (requiring initial attention before other aspects came into play) and those which were secondary (building upon the primary aspects). Two of the authors performed this sorting independently and compared their results. Consensus was quickly achieved on the classifications shown in Figure 6.

Next, steps in the learning, facilitation, and assessment methodologies published in the *Faculty Guidebook* were investigated with respect to which of the 14 aspects were most operational in this step (Leise, Beyerlein & Apple, 2007; Smith & Apple, 2007; Apple & Baehr, 2007). Not surprisingly, a majority of the aspects appeared in some way in conjunction with at least one step in each methodology. Alternatively, authors strived to identify the top four aspects that impact the outcomes of each methodology. The learning methodology was seen as most strongly associated with scope of learning, ownership, cognitive complexity, and efficacy. These key features of learning are consistent with those advocated by Halpern and Hakel (2003) and Wiggins and McTighe (2005). The facilitation methodology was most strongly associated with scope of learning, delivery, relationship, and challenge. These key features of facilitation are central to the writings of Astin (2001) and Fink (2003). The assessment methodology was most strongly associated with feedback, transparency, measurement, and self-awareness. These key features

of assessment are also recognized by Angelo and Cross (1993) and Banta, Jones and Black (2009). In this analysis, three aspects were seen as outside the learning, facilitation, and assessment methodologies. These were seen as more epistemological and more deeply rooted in educational research. The three aspects in this group were control, social orientation, and design. Clustering of these aspects echoes perspectives on teaching/learning held by Bransford et al (2000), Palmer (2007), and Jamieson and Lohrmann (2009). These three aspects were subsumed under the category “learning principles/philosophy” along with three other concept labels: educational research, best practices in teaching/learning, and learning outcomes.

It was recognized early in the concept map construction process that the four categories (learning principles/philosophy, learning methodology, facilitation methodology, and assessment methodology) along with the 14 aspects by themselves would be insufficient for the construction of a meaningful concept map. Additional categories were seen as necessary to complete the set: one that defined who is transformed as a result of teaching/learning, and one that forecasted long-term impacts from teaching/learning. Support for these additions can be found in the work of The National Research Council (2010), which analyzes the needs and expectations of different stakeholders in modern higher education. Figure 7 shows the final parking lot of concept labels used to construct our concept maps. It contains six categories under which general concept labels are listed in the order in which they are most likely to be encountered in any teaching/learning environment, red, yellow, or green. The fourteen aspects are shown in ALL CAPS. The color of each concept map would be

Figure 7 Parking lot of general teaching/learning labels for use in concept maps

<p>Who/What is Transformed?</p> <p>students/learning faculty/teachers programs/institutions learning communities</p>	<p>Learning Principles/Philosophy</p> <p>educational theories best practices in teaching/learning CONTROL SOCIAL ORIENTATION DESIGN learning outcomes</p>	<p>Long-Term Impacts</p> <p>growth of knowledge (content) growth of learning skills (process) service to society personal/professional development action research</p>
<p>Learning Process Methodology</p> <p>SCOPE OF LEARNING OWNERSHIP COGNITIVE COMPLEXITY EFFICACY (learner & teacher)</p>	<p>Facilitation Methodology</p> <p>SCOPE OF LEARNING DELIVERY RELATIONSHIP CHALLENGE</p>	<p>Assessment Methodology</p> <p>FEEDBACK TRANSPARENCY MEASUREMENT SELF-AWARENESS</p>

determined by what adjectives are used to modify these labels, how they are connected, and which prepositional phrases are used to make these connections.

Our first concept map was of teaching/learning in a transformational learning environment. This came to be known as the GREEN map. As it evolved, the map incorporated a large number of descriptors associated with GREEN performance as described in Figure 8. The map included a positive feedback loop illustrating how growth of learning skills accelerates the growth of knowledge as suggested by Duncan-Hewitt (2007). The map also recognized and demonstrated synergy between a systematic approach to curriculum design, knowledge building activities, learner-centered facilitation, an assessment mindset, and shared commitment to an enriched learning environment (Smith & Apple, 2007).

The second concept map was of teaching/learning in a traditional instructional environment. This was referred to as the RED map. As it evolved, we attempted to remove deficit language from the map in order to demonstrate respect for the skills required to perform in

the environment described by this map. A third map was created to illustrate the intermediate state of a transitional instructional environment in which aspects have begun to evolve toward those portrayed in the GREEN map, but are still at an early stage of reorganization. This was referred to as the YELLOW map.

Internal review of the three maps suggested that a narrative description of key propositional units contained in the map would help users better internalize the graphical messaging of each concept map. Furthermore, writing these descriptions in a standardized format was assumed to help users gain deeper insight by comparing the dynamics of teaching/learning in the three different environments. Since these descriptions are infused with beliefs and tools that educators carry with them during any teaching/learning activity, we came to refer to them as “backpacks.” Figure 9 gives a recipe for backpack construction, including an ordered set of themes addressed by backpack statements and a general location in the concept map where each statement is operational. Figure 10 demonstrates where in the concept maps each backpack statement may be found.

Figure 8 Scales used to describe red, yellow, and green performance in each aspect

Challenge	Enabling	Pushing	Empowering
Cognitive Complexity	Memorizing	Understanding	Problem Solving
Control	Faculty-Centered	Learning-Centered	Learner-Centered
Delivery	Presentation	Discussion	Active Learning
Design	Rigid	Modular	Responsive
Efficacy	Doubt	Willingness to Try	Conviction
Feedback	Evaluation	Progress Report	Assessment
Measurement	Subjective Determination	Categorical Determination	Objective Determination
Ownership	Directed	Guided	Self-Directed
Relationship	Emotionally Distant	Emotionally Available	Emotionally Invested
Scope of Learning	Situational Understanding	Disciplinary Understanding	Interdisciplinary Understanding
Self-Awareness	Self-Consciousness	Self-Regulation	Self-Growth
Social Orientation	Individual	Collaborative	Community
Transparency	Private	Limited Exposure	Public

Figure 9 Themes for backpack statements and their general locations

- a) Vision of scholarship in teaching/learning (left column)
- b) Resource base for making teaching/learning decisions (left column)
- c) Role of community (left column and top)
- d) Relationship between program, course, and activity design (left column and bottom)
- e) Classroom integration of teaching/learning processes (middle upper)
- f) Approach to curricula (left middle upper)
- g) Approach to facilitation (right middle upper)
- h) Approach to assessment (right column)
- i) Impact on students (middle lower)
- j) Impact on faculty (middle lower)

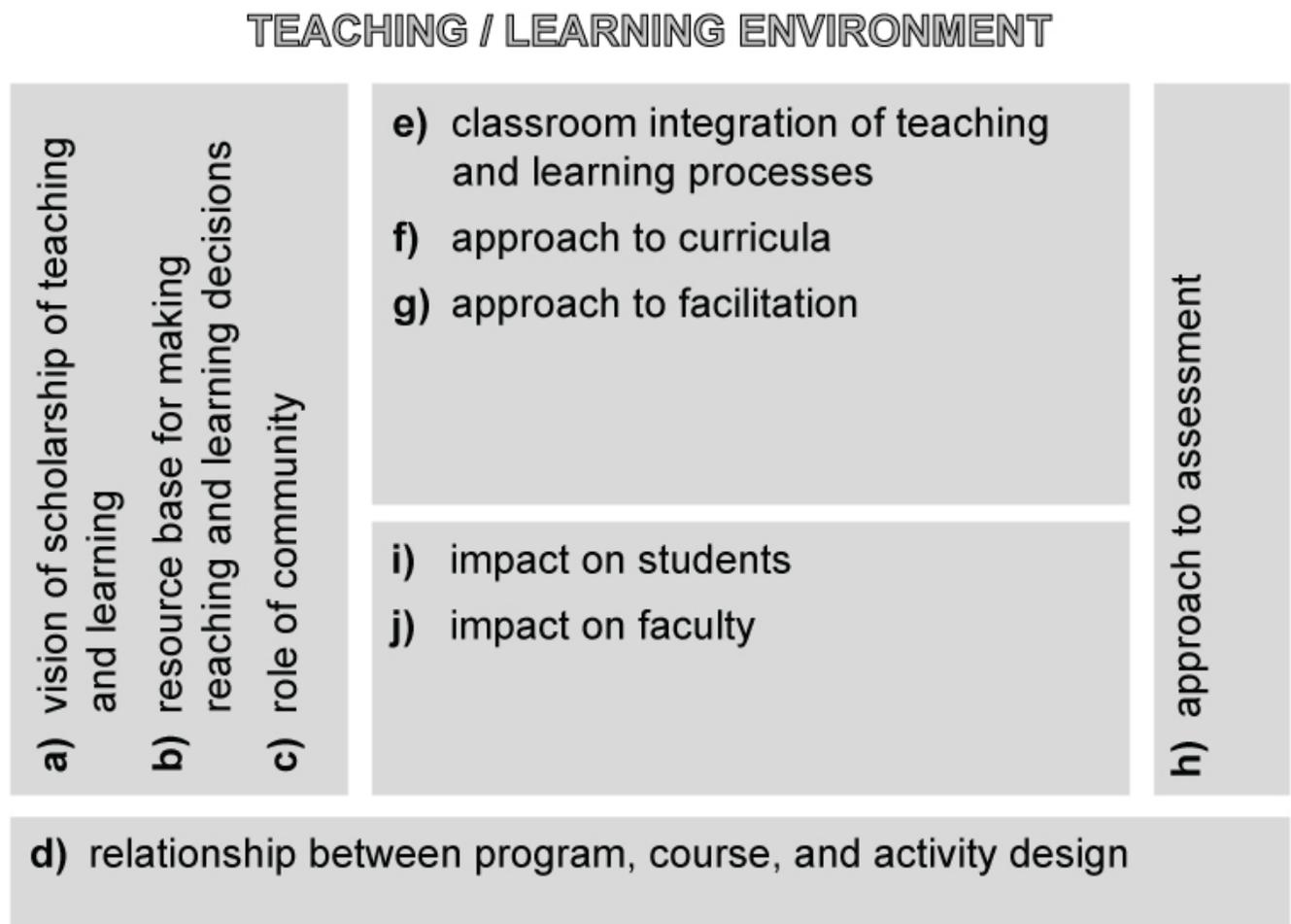
Input was solicited from the 2012 winter meeting of the Academy of Process Educators about interim products

from this work. Those present were given an overview of the development process to date and were asked to provide an SII of the GREEN map based on the focus question and the following criteria:

- Ability of the map to add meaning to each of the individual aspects
- Ability of the map to add meaning through interaction between the aspects
- Accessibility of the map to a novice process educator
- Added value of the RED and YELLOW map as well as the backpacks in building and reinforcing understanding of the GREEN map.

Lively discussion of the three maps ensued. The collective response suggested that the GREEN map was more effective than the Compass of Higher Education in stimulating reflection about the structure of teaching/learning as well as in generating desire to improve specific elements in the teaching/learning enterprise. All agreed that the aspects have impact on one another, but the vertical strands in the maps illustrate which aspects

Figure 10 Backpack theme statements and their locations within the concept maps



are closely allied and should be worked on together. It was observed that the language in the concept maps contained less jargon and was more accessible to a general audience than previous resources that explicitly introduced Process Education. The focus question was found to be engaging and well supported by the concept labels and linking phrases. A few wording changes were suggested to allow for greater clarity and to remove some of the remaining deficit language in the RED and YELLOW maps. Participants reported that they found it easier to see meaning in the GREEN map by reviewing the entire sequence of maps rather than focusing solely on the GREEN map. The green and red backpacks also enabled participants to quickly immerse themselves in critical thinking about the concept maps. A strong recommendation was made for a yellow backpack to accompany the YELLOW map. Reviewers saw a similar

organizational pattern in all three maps and wondered whether it made sense to provide a simplified meta-map that explicitly communicated this navigational scheme. There was much curiosity about design and interactivity planned for an electronic learning object that would accompany the existing on-line resource about the Transformation of Education. The three concept maps which follow incorporate many of the suggestions from Academy meeting reviewers. (The meta-map in Figure 11 was created to illustrate a basic navigation pattern that applied to all three maps. Figure 12 summarizes the major findings for each map, as well as across maps. All concept maps, backpack maps, and backpack statements may be found on the following pages, in Figures 13 through 21.)

Figure 11 Common navigational pattern in concept maps

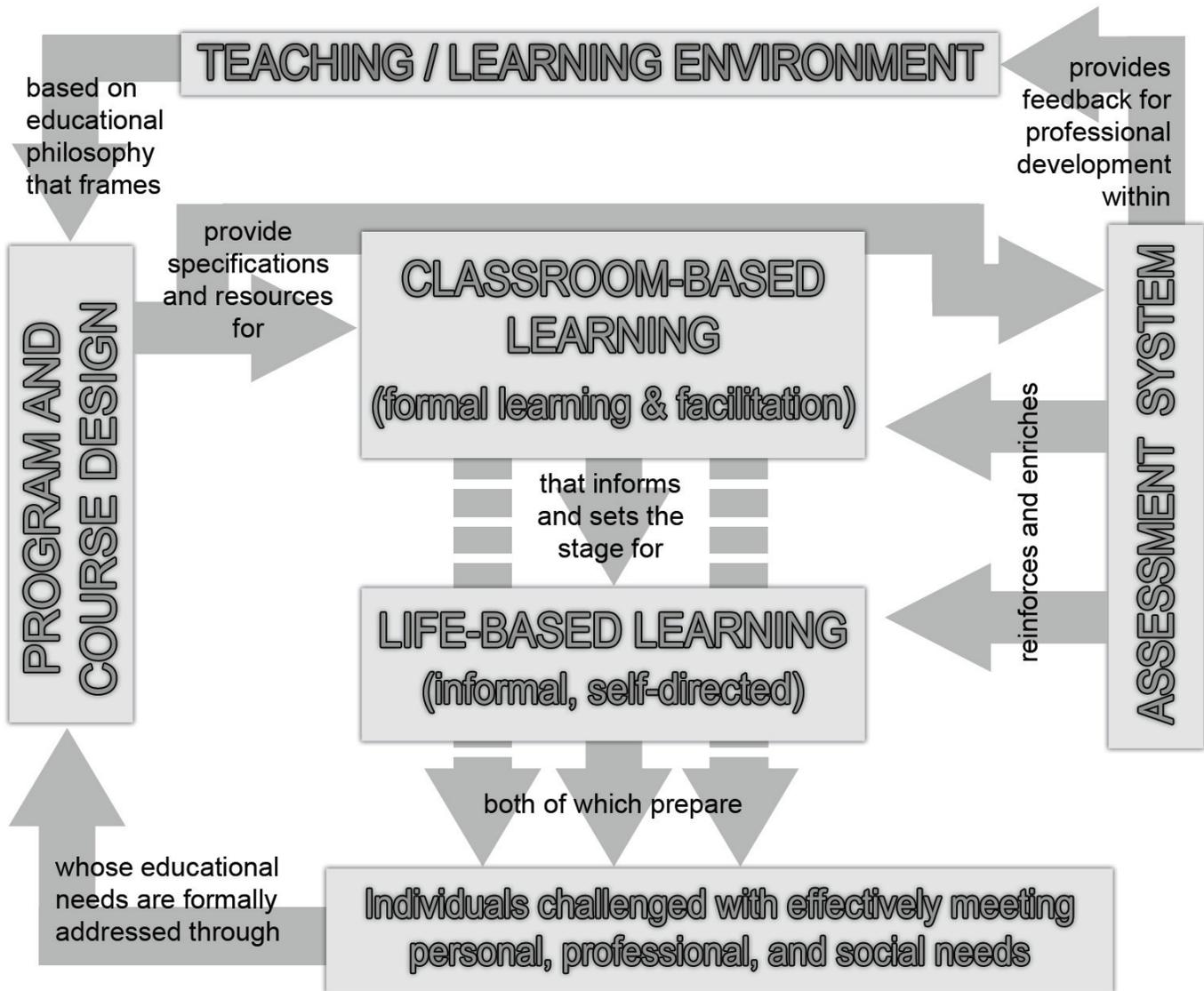


Figure 12 Summary concept map and backpack findings

<p>The GREEN MAP and BACKPACK</p>	<ul style="list-style-type: none"> • supports the definition of Process Education • reflects all the attributes in the profile of a process educator • aligns with the principles of Process Education • has a unique and natural location for all 14 aspects under program/course design, activity design, facilitation, or assessment • uses a number of green adjectives from the Transformation of Education scales to modify aspect labels • underscores synergy between course design, learning methodology, facilitation methodology, and assessment methodology • respects different learner needs and incorporates meaningful feedback from external constituents in program/course design • results in growth of interdisciplinary knowledge and skills which are important intermediate objectives and accelerators of desired educational outcomes • emphasizes that a vibrant teaching/learning environment requires a community with participation of multiple faculty and student leaders • uses iteration to illustrate possibilities for process improvement
<p>The RED MAP and BACKPACK</p>	<ul style="list-style-type: none"> • focuses on removing disciplinary incompetence en route to promoting predictable, targeted behaviors • assumes process to be secondary to content in course design/delivery • has a place for all 14 aspects, but these are far more isolated and disconnected than they are in the GREEN map • uses a number of red adjectives from the Transformation of Education scales to modify aspect labels • does not reach out to stakeholders to include their perspectives/needs in course design • can be created/sustained single-handedly • reflects a compliance mindset in response to accreditation requirements • has stood the test of time without changing much • assumes relatively homogeneous preparation/prior experience by students • often leaves the teacher and student trained, but fundamentally unchanged
<p>The YELLOW MAP and BACKPACK</p>	<ul style="list-style-type: none"> • retains some of the hierarchy/compartmentalization of the RED map • has many of the same links as the GREEN map but with reversed information flow • is typical of many current teaching/learning environments • seeks to emulate best practices through extensive use of tips and templates • is potentially more confusing than the RED or GREEN maps • uses a number of yellow adjectives from the Transformation of Education scales to modify aspect labels
<p>ALL MAPS and BACKPACKS</p>	<ul style="list-style-type: none"> • coexist with the storyline in their respective backpacks • illustrate a natural clustering and ordering to the 14 aspects • are faculty-focused, not student-focused (by design) • complement the existing Transformation of Education learning object which retains great power and utility • help users better understand the companion maps

Figure 13 Green concept map – Teaching in a Transformational Learning Environment

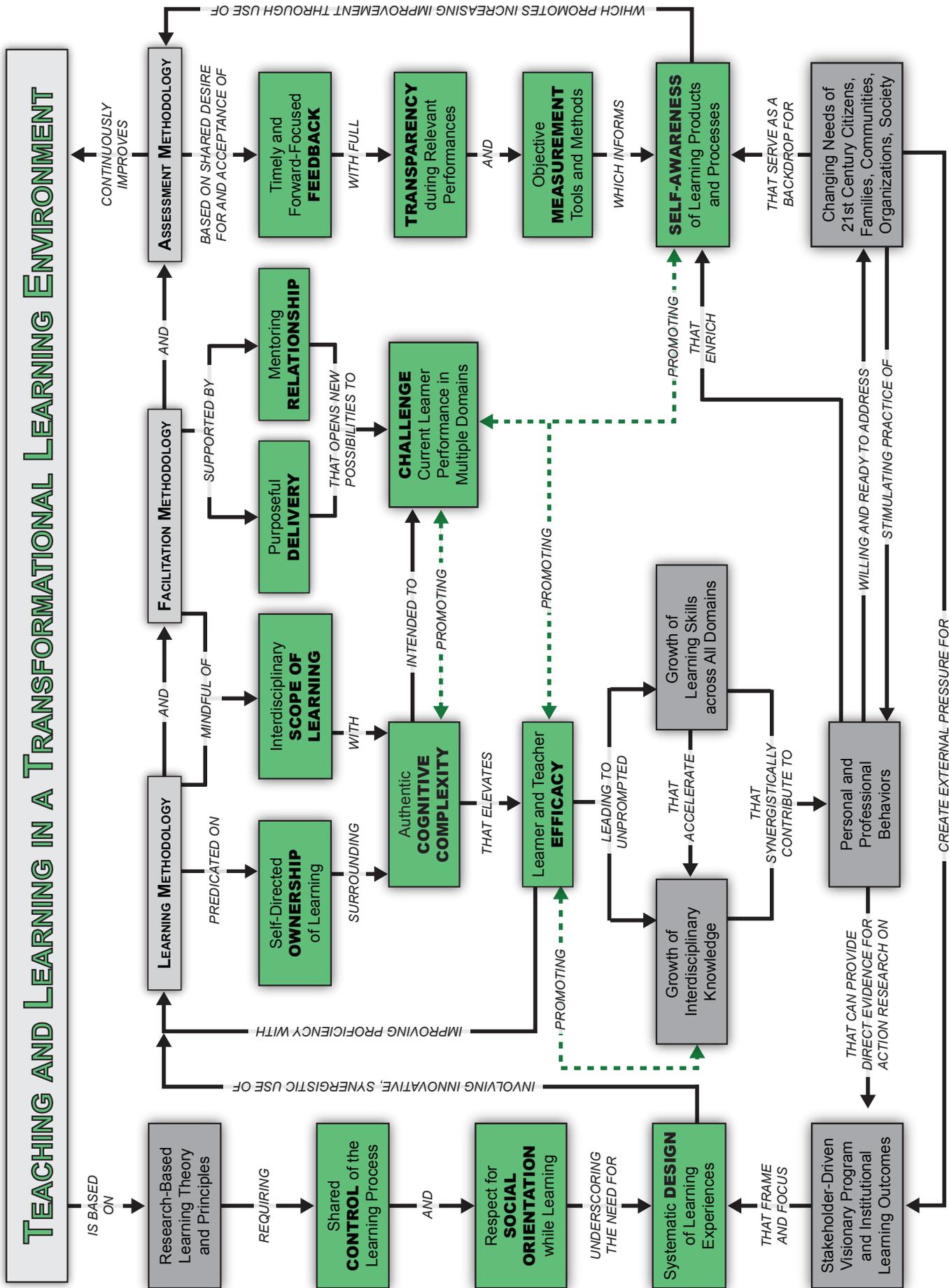


Figure 14 Green backpack map

An Educator in a TRANSFORMATIONAL Teaching/Learning Environment...

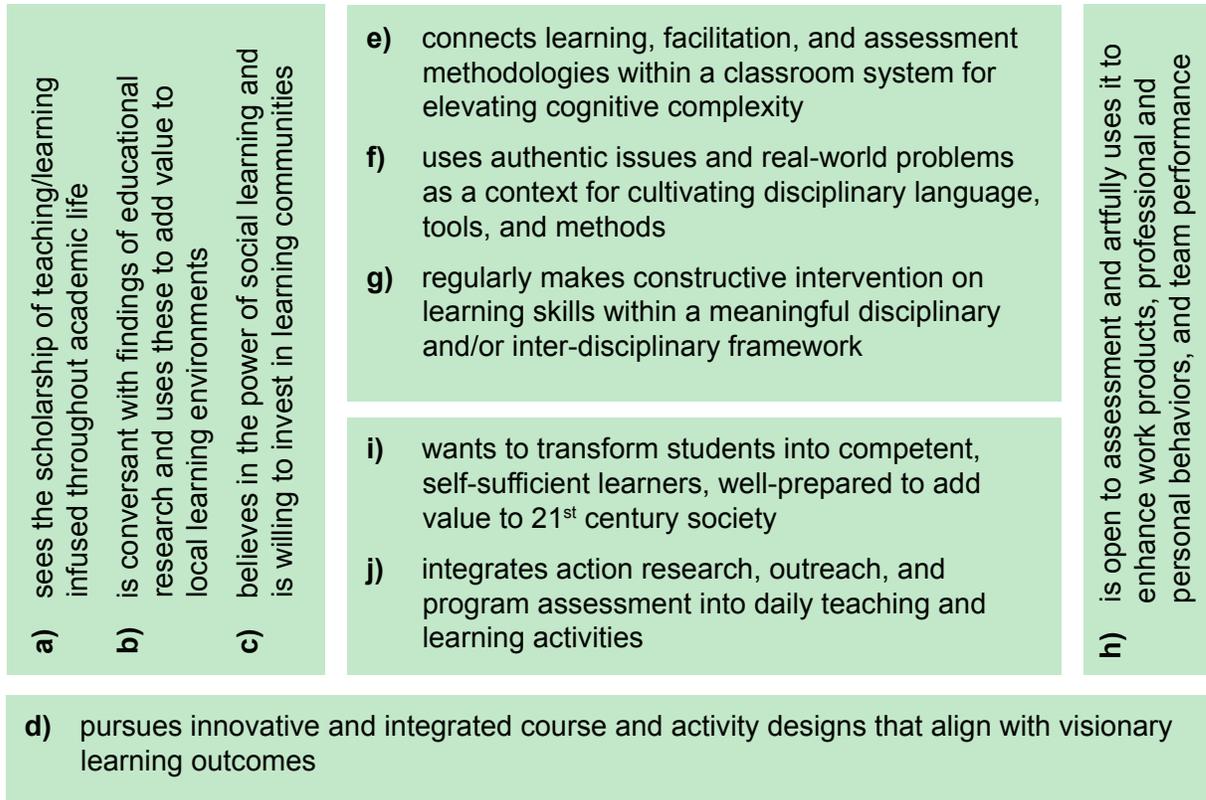


Figure 15 Green backpack

The Educator with the Green Backpack

- a) sees the scholarship of teaching/learning infused throughout academic life
- b) is conversant with findings of educational research and uses these to add value to local learning environments
- c) believes in the power of social learning and is willing to invest in learning communities
- d) pursues innovative and integrated course as well as activity designs that align with visionary learning outcomes
- e) connects learning, facilitation, and assessment methodologies within a classroom system for elevating cognitive complexity
- f) uses authentic issues and real-world problems as a context for cultivating disciplinary language, tools, and methods
- g) regularly makes constructive intervention on learning skills within a meaningful disciplinary and/or interdisciplinary framework
- h) is open to assessment and artfully uses it to enhance work products, professional and personal behaviors, and team performance
- i) wants to transform students into competent, self-sufficient learners, well-prepared to add value to 21st century society
- j) integrates action research, outreach, and program assessment into daily teaching and learning activities



Figure 16 Red concept map – Teaching in a Traditional Learning Environment

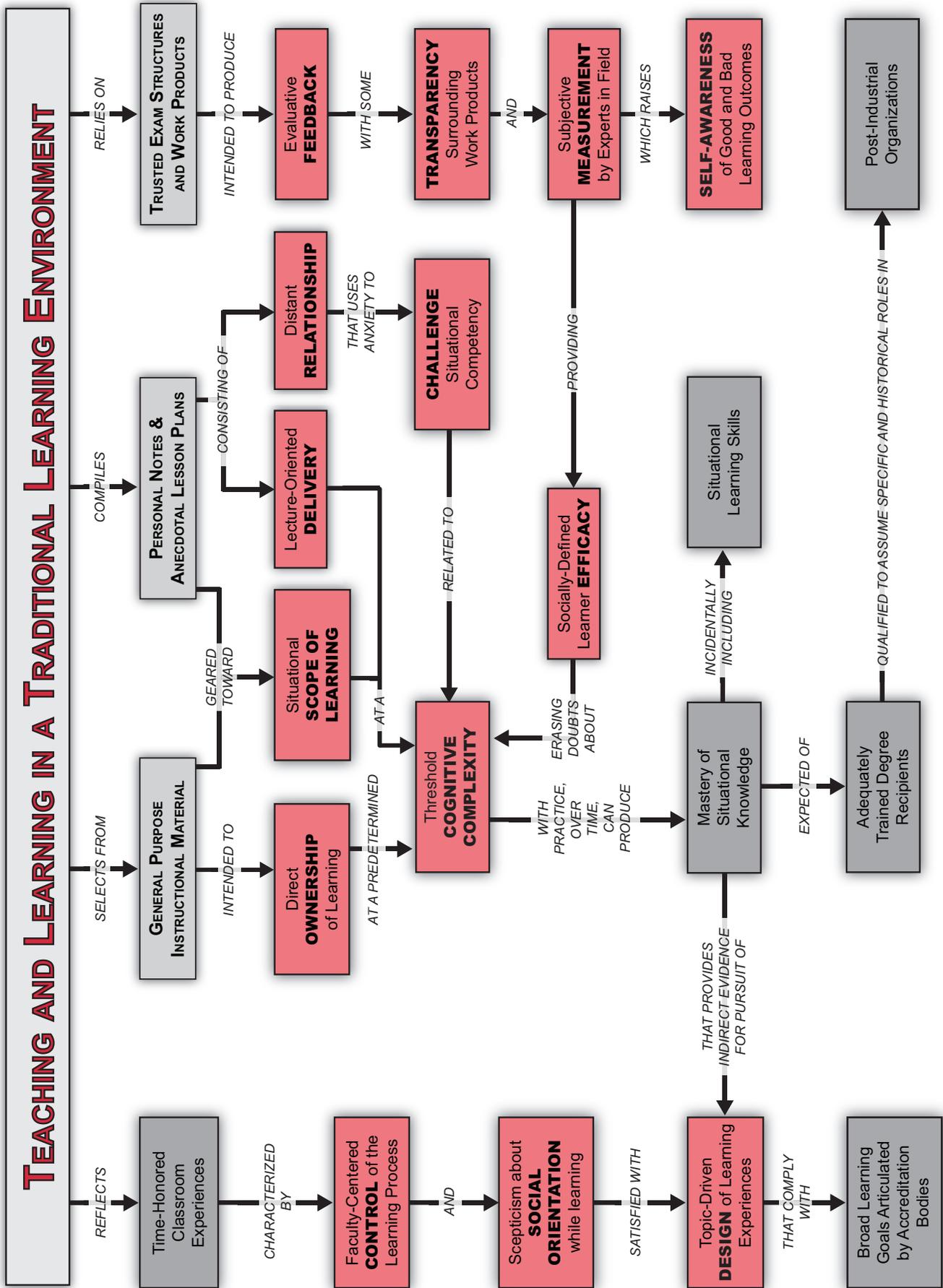


Figure 17 Red backpack map

An Educator in a TRADITIONAL Teaching/Learning Environment...

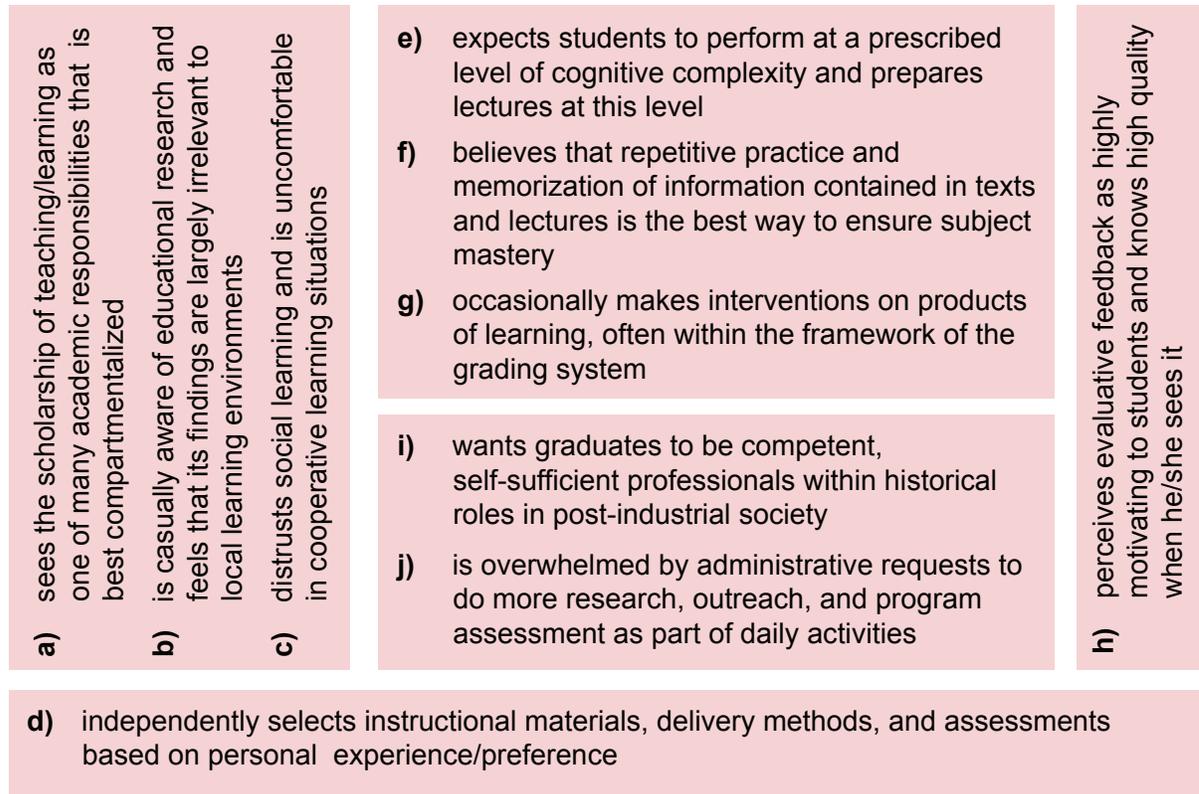


Figure 18 Red backpack

The Educator with the Red Backpack

- a) sees the scholarship of teaching/learning as one of many academic responsibilities that is best compartmentalized
- b) is casually aware of educational research and feels that its findings are largely irrelevant to local learning environments
- c) distrusts social learning and is uncomfortable in cooperative learning situations
- d) independently selects instructional materials, delivery methods, and assessments based on personal experience/preference
- e) expects students to perform at a prescribed level of cognitive complexity and prepares lectures at this level
- f) believes that repetitive practice and memorization of information contained in texts and lectures is the best way to ensure subject mastery
- g) occasionally makes interventions on products of learning, often within the framework of the grading system
- h) perceives evaluative feedback as highly motivating to students and knows high quality when he/she sees it
- i) wants graduates to be competent, self-sufficient professionals within historical roles in post-industrial society
- j) is overwhelmed by administrative requests to do more research, outreach, and program assessment as part of daily activities



Figure 19 Yellow concept map – Teaching in a Transitional Learning Environment

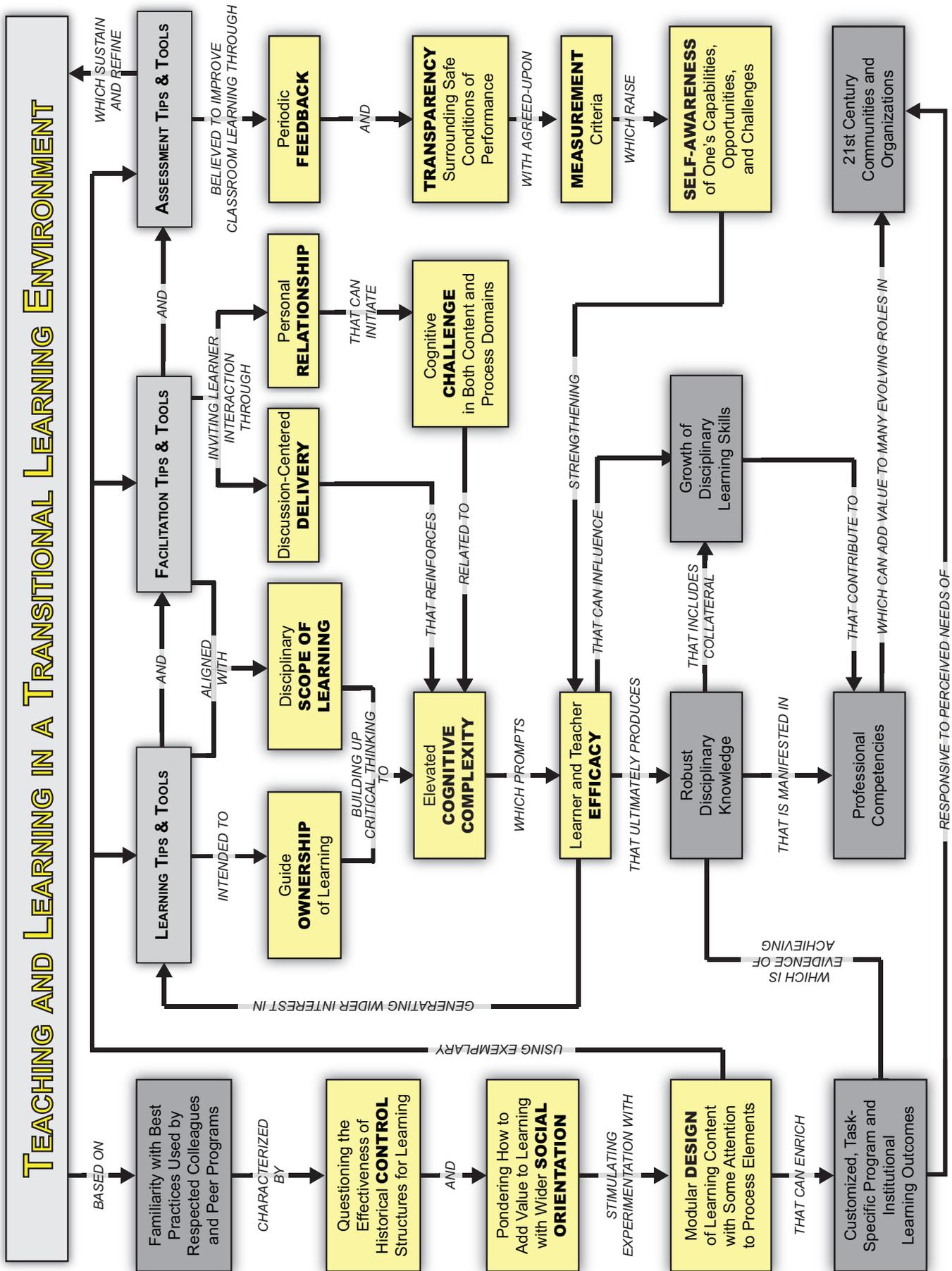


Figure 20 Yellow backpack map

An Educator in a TRANSITIONAL Teaching/Learning Environment...

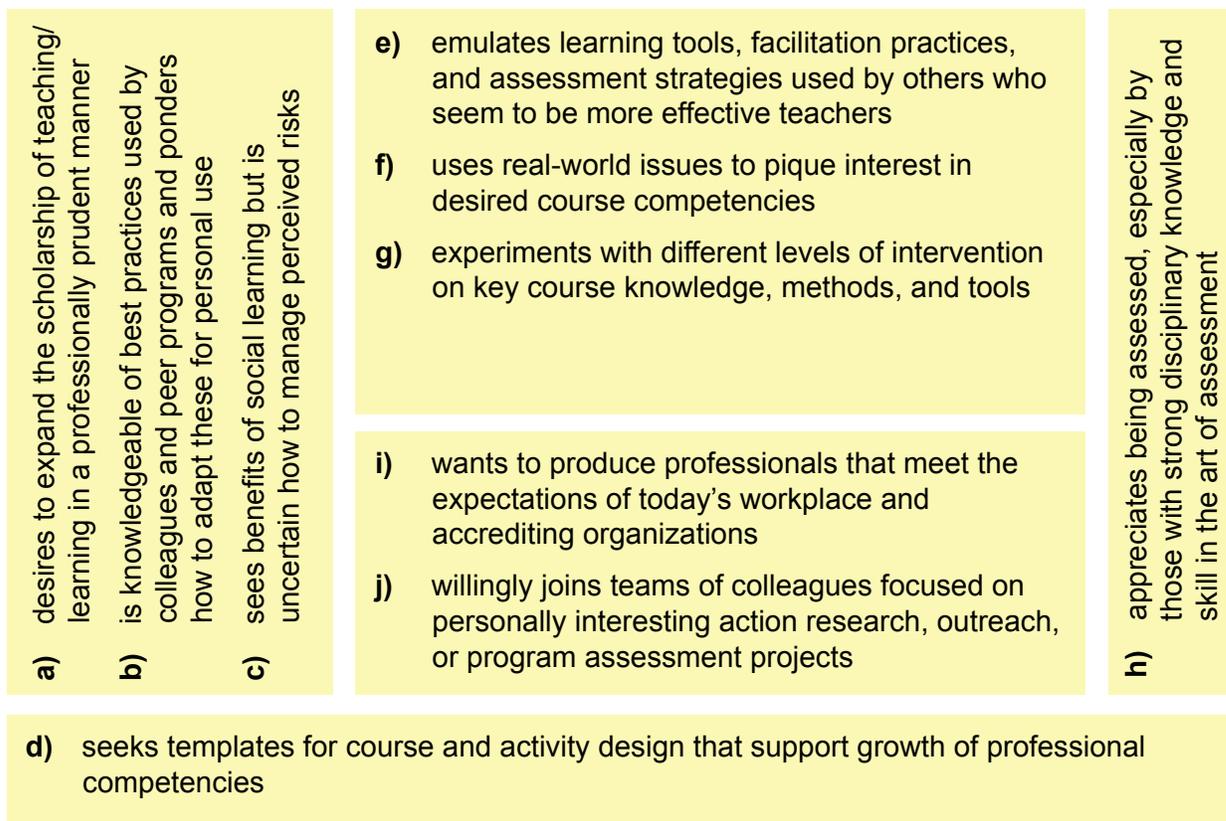


Figure 21 Yellow backpack

The Educator with the Yellow Backpack

- a) desires to expand the scholarship of teaching/learning in a professionally prudent manner
- b) is knowledgeable of best practices used by colleagues and peer programs and is pondering how to adapt these for personal use
- c) sees benefits of social learning but is uncertain how to manage perceived risks
- d) seeks templates for course and activity design that support growth of professional competencies
- e) emulates learning tools, facilitation practices, and assessment strategies used by others who seem to be more effective teachers
- f) uses real-world issues to pique interest in desired course competencies
- g) experiments with different levels of intervention on key course knowledge, methods, and tools
- h) appreciates being assessed, especially by those with strong disciplinary knowledge and skill in the art of assessment
- i) wants to produce professionals that meet the expectations of today's workplace and accrediting organizations
- j) willingly joins teams of colleagues focused on personally interesting action research, outreach, or program assessment projects



Learning Module Design

The learning module, which is the end result of the process described in this paper, is available at:

www.transformation-of-education.com/conceptmaps

It contains the following web-based interactive pages:

- Introduction
- 14 Aspects
- Aspects and Scales
- Methodology (for Constructing Concept Maps)
- Position of Aspects
- Map Labels Parking Lot
- Map Navigational Pattern
- Backpack Region Map
- Green Map
- Green Backpack Map
- Green Backpack Text
- Green Insights
- Yellow Map
- Yellow Backpack Map
- Yellow Backpack Text
- Yellow Insights
- Red Map
- Red Backpack Map
- Red Backpack Text
- Red Insights
- Common Insights
- IJPE Paper
- Transformation of Education Learning Object

Users are presented with a split-page frame format which allows for ease of navigation through content which is informationally dense. Figure 22 shows a screenshot of the home page of the learning object. To make the concept map content as accessible as possible, the authors decided to make the GREEN Map interactive. This interactivity allows users to explore the maps in some detail, as boxes in the concept map are hyperlinked to related or explanatory content, including the current Transformation of Education learning object.

The authors assume that there will be a need for the creation of a professional development learning activity, featuring the Transformation of Education Concept Maps. As such, the current learning module

will mostly likely conform to a formal activity structure that includes a Why statement, Learning Outcomes, Performance Criteria, Plan, and Critical Thinking Questions (Pacific Crest, 2009).

Conclusions

Through the process of constructing these concept maps and the feedback we have received, we found that, while all 14 aspects of the Transformation of Education are present in maps of all three colors, the aspects are most fully integrated in the GREEN map. [That additional aspects of Educational Transformation (beyond the set of 14) did not rise to prominence through our work was an unsought, yet welcome, validation of the completeness of that set and the critical thinking behind the work on that project.]

In our assessment of the use of the concept maps and backpacks that we created, we found that both the maps and backpacks are broadly accessible to faculty and staff; that is, a **transformational** learning environment can be understood by a **traditional** educator. Furthermore, we learned that being able to access and understand a particular map does not automatically lead to an ability to perform in the environment described by that map.

Perhaps most interestingly, our work constructing the concept maps demonstrated to us that, while the concept universe that constitutes Process Education (as described by the definition of Process Education, the Ways of Being of a Process Educator, the 10 Principles of Process Education, and 14 aspects of the Transformation of Education) may be complex, it is also consistent. We found that the green concept map functions beautifully as the concept map for Process Education and that a side-by-side comparison of this map with the other articulations of Process Education yields no conceptual inconsistencies.

This realization strongly suggests to us that the concept maps that are the result of our work can be used as the basis for professional development activities that target audiences at multiple levels and across different contexts of Process Education (Pacific Crest, 2012). We also believe that a concept map analysis would make for a great introduction to Process Education workshop at the annual conference.

A logical next step where our work is concerned is the creation of a cultural analysis tool for measuring the degree of greenness—red is least green—in local teaching/learning environments. Interest has already been expressed in that project due to its potential to yield a valuable institutional tool.

Figure 22 Screenshot of Transformation of Education concept maplearning object

Concept Maps for Linking Aspects in the Transformation of Education

Introduction

- Introduction
- 14 Aspects
- Aspects and Scales
- Methodology (for Constructing Concept Maps)
- Position of Aspects
- Map Labels Parking Lot
- Map Navigational Pattern
- Backpack Region Map
- Green Map
- Green Backpack Map
- Green Backpack Text
- Green Insights
- Yellow Map
- Yellow Backpack Map
- Yellow Backpack Text
- Yellow Insights
- Red Map
- Red Backpack Map
- Red Backpack Text
- Red Insights
- Common Insights
- IJPE Paper
- Transformation of Education Learning Object

This Learning Object is available to support the paper of the same name, as published June, 2012, in the International Journal of Process Education.

Simply click the image at right to read the paper itself (pdf format). It will open in a new window.

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