

## **Elemental analysis of the online learning experience**

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### **ABSTRACT**

The following discussion will compare four contemporary methods of online teaching and learning: 1) student-centered, 2) subject-centered, 3) teacher-centered, and 4) teaching-centered. This paper argues that the most effective methods are those that engage six dimensions of human existence: physical, social, emotional, psychological, intellectual, and spiritual. However there is no golden rule or single instructional model that will guarantee effective teaching or learning in every situation. Guidelines should be chosen based on how well they meet the needs of the discipline being studied, the students involved, and the ability of the instructor. What engages one class may disengage the next. Learning, whether online or not, is a personal process. With an understanding of the personal nature of the learning interaction, the most effective teaching methods are those that engage individuals in an intimate way. The objective of this paper is to present and define four contemporary teaching models, their expressed or applied engagement of the dimensions listed above in the online environment and provide foundational concepts which may serve as starting points in the evaluation of one's own methods, philosophy, and practice.

**Keywords:** *online teaching and learning, student-centered, subject-centered, teacher-centered, teaching-centered, Maslow's hierarchy of needs.*

### **ELEMENTAL ANALYSIS OF THE ONLINE LEARNING EXPERIENCE**

Education can be defined as an activity undertaken or initiated to effect changes in knowledge, skill, and attitudes of individuals, groups or communities. Learning, in contrast, emphasizes the individual where the change occurs (Knowles, Holton and Swanson, 1998). Based on this definition, the goal of the educator is to facilitate change in an individual that may be a member of a larger group or community. The degree and direction of this change is determined by the purpose of the educational activity itself. In the workplace this is usually defined in terms of corporate objectives and expectations, while academic institutions usually define objectives as discipline related competencies.

Regardless of its origin and purpose, learning must occur within the individual; education occurs from the outside, learning occurs from within. Further distinction is warranted between processes and experiences as they relate to education and learning. A process implies a prescribed set of procedures leading to the attainment of a predetermined objective. There are clearly defined boundaries in a process that are exclusive to its function and design. Both objects and people can participate in processes. Experiences, however, are totally inclusive of all aspects of an activity and are people centered. Generally, only people have experiences as they are described in terms of their physical, social, spiritual, emotional, intellectual, or psychological impact. Thus, the education/process, learning/experience relation is illustrated; education is a learning process undertaken to gain knowledge or skill, learning is the experience of gaining knowledge or skill. Learning is an experience; therefore it can be described using the six elements described below.

## Dimensions

William Hettler (1984) proposed a six dimensional model that provided an objective representation of human experience and existence. This article refers to these dimensions as existential elements. The six original dimensions or elements were: physical, spiritual, intellectual, social, emotional, and occupational. Due to the importance of psychological mechanisms in the learning process the occupational element has been changed to psychological. This dimensional model provides a useful and objective method of examining an individual's experiences, as any experience can be described in terms of one or more of the dimensions. When examining experiences, we do not consciously separate each element from the whole; however, each dimension is affected in some way, negatively or positively. Experiences are typically described in relation to which dimension was affected most, although the whole is more than the sum of its parts; the entire effect of the interaction of elements is more than the effect on any specific one. When one dimension is affected, that effect is echoed throughout the other dimensions creating resonance. For example, a traumatic event or experience such as losing a loved one is not difficult to describe in terms of its affect on each dimension, such as crying on the physical level or depression on the emotional level. The relationship that exists between these elements can further be described semantically, such as the closeness in meanings between intellectual and psychological or emotional and spiritual. Thus, the dimensions are completely interdependent.

The following definitions are adapted from the *Wellness Workbook* (Travis & Ryan, 1988). The elements below are defined in terms of activities or processes:

- Physical – Activities or process relating to the body; also physical security, skills, competencies, biological processes, behaviors, tangible assets and work environment.
- Social – Activities or processes relating to people, such as personal interactions, relationships, and communication; also the perception of being a valued contributor as well as a supporter of group activities.
- Emotional – This element addresses issues relating to personal feelings and those activities or processes involved in self-identity and self-regard and promoting individual security.
- Psychological – Activities that engage or utilize mental processes and behaviors; this element especially pertains to the expectation of outcomes and the realization of those outcomes in activities whereby understanding/meaning is derived.
- Intellectual – Activities or processes requiring the use of the mind; especially relating to critical or higher order thinking.
- Spiritual – Activities or processes relating to the spirit, the non tangible or non material, and the search for subjective meaning or intrinsic value.

This article argues that the most effective online teaching methods are those that engage all six dimensions; an environment conducive to personal change is provided by fulfilling individual student needs in each dimension. Maslow's hierarchy of needs (Huitt, 2004), although not empirically supported has been widely accepted, and is useful for this discussion as an example of a needs based growth process; a series of levels must be attained through a continual change or growth process, in order to progress to the ultimate goal of self-actualization. In a learning activity, the ultimate goal is the learning objective, which is also achieved through a change process. Salmon (2003) proposed a five stage model of online learning and teaching that demonstrates this growth process and bares significant resemblance to Maslow's model. Table 1 demonstrates the relationships between Salmon's, Maslow's and the existential models.

**Table 1.** Relationships between Salmon's, Maslow's and the Existential Models

Salmon's Online Learning Model	Maslow's Hierarchy of Needs	Existential Elements
Stage 1 – Access and Motivation	Physiological & Safety Needs	Physical
Stage 2 – Online Socialization	Belongingness, Love & Esteem	Social & Emotional
Stage 3 – Information Exchange	Understanding & Aesthetics	Psychological
Stage 4 – Knowledge Construction	Self-Actualization	Intellectual
Stage 5 – Development	Transcendence	Spiritual

Stage one of Salmon's model, access and motivation, is directly related to Maslow's physiological and safety needs as well as the physical dimension. Stage two, online socialization, is related to the needs of belongingness, love and esteem as well as the social and emotional dimensions. Stage three, information exchange, is related to needs of understanding and aesthetics as well as the psychological dimension; the psychological dimension is directly related to fundamental learning mechanisms and the creation of meaning through cognitive structures and processes. The fourth stage, knowledge construction, is related to self-actualization and the intellectual dimension which requires critical and higher order thinking. The final development stage is directly related to transcendence and the spiritual dimension; once a topic is understood, or skill is gained, the utility of that learning is measured in an individual's ability to apply it, transcending understanding and moving to application and utility. Analyzing a teaching/learning method's engagement of these dimensions, through study of techniques or strategies specific to the method, may provide a measure of its effectiveness.

### CONVENTIONS: METHODS AND TECHNIQUES

In a study of university education, Verner (1964) distinguished between the concepts of method, technique and devices. Verner suggested that methods are the ways in which people are organized within an educational activity, and through the method a relationship is established between the learner and instructor. The methods analyzed in this discussion are: student-centered as proposed by Rogers and Freiberg (1994), subject-centered as proposed by Palmer 1997, teacher-centered as defined by Knowles, Holton and Swanson (2005), and teaching-centered in which students learn by teaching content to their classmates. The scope of this paper will limit the following discussion to a single technique specific to each method; techniques are the variety of processes that are utilized to further the learning once the method has been determined. There are numerous techniques available to online learning facilitators; those presented in this discussion do not represent an exhaustive list, rather the objective is to present a technique that is specific to the method being discussed. The techniques discussed in this article include: lecture, social discussion, teaching through the microcosm, and student teaching. Devices are things that support the technique and help to facilitate learning such as audio-visual aids (Conti, 2004).

## METHOD I: TEACHER-CENTERED

The teacher-centered approach, or teacher-directed approach, is a pedagogical model that assigns the instructor full responsibility for making all decisions about what will be learned, how it will be learned, when it will be learned, and if it has been learned (Knowles, Holton & Swanson, 2005). The instructor is the focus of the learning interaction; the teacher has all the knowledge of the subject being studied and the student will only gain knowledge that the instructor allows or finds appropriate. There is no direct student-subject interactions, all interactions are mediated by the instructor. Teacher-centered method use in the online, adult classroom is debatable, as it fails to recognize the vast experiences, abilities, individuality, and intrinsic worth of the adult learner. The learner's previous experiences, knowledge, and skill are of little worth in the teacher-centered classroom; the knowledge and experience of central importance, is that of the teacher, textbook writer and devices producer. Therefore, transmittal techniques such as lecture and assigned readings are central to this methodology. The teacher-centered method however, is in common use online and in traditional classrooms and has proven to be successful for certain learning objectives. This method may be well suited to accomplish minimal learning objectives needed to obtain quick fix knowledge over a short period.

Based on the previous definition and discussion, this methods engagement of the six existential elements is variable and completely dependent on the instructor. The instructor alone determines how the students engage in classroom activities as well as social activities. In comparison to the other methods presented, the amount of engagement of the six elements is relatively low, as this method fails to utilize the individuality and creative personal power of each student. Table 2 demonstrates the variability of engagement of the elements and its dependence on the instructor.

**Table 2.** Six existential elements of teacher-centered method

<b>Physical</b>	The student's physical presence is the only required element
<b>Emotional</b>	Via Instructor
<b>Psychological</b>	Via Instructor
<b>Social</b>	Via Instructor
<b>Intellectual</b>	Limited to the intellectual abilities of the instructor.
<b>Spiritual</b>	Via Instructor

The techniques central to this method are focused on the efficient transmittal of information from the instructor to the student. Lecture, has been identified as the most preferred and most used instructional technique in the adult classroom (Darkenwald & Merriam, 1982). In lecture, information follows a linear path in one direction, instructor to student; a government study indicated that regardless of the delivery method, whether in a traditional classroom, through video, or printed format learning remained the same (Hall & Cushing, 1947). Online lecture techniques include: PowerPoint presentations, written lecture notes, streaming video, and do not require the personal presence of a lecturer. Recent research suggests that 77% of technology based learning occurs between a single student and computer without any outside personal interactions (Galvin, 2001); if lecture is accepted to be a transmittal instrument that follows a single, linear path, teacher to student or subject to student, than it may be assumed that lecture is one of the most common technology-based learning techniques used today. A study Table 3 analyzes lecture in terms of its engagement of the existential elements.

**Table 3.** *Six existential elements of lecture technique*

<b>Technique</b>	<b>Lecture</b>
<b>Physical</b>	Student must be physically present. Safety needs are generally not addressed though may be via instructor.
<b>Emotional</b>	Any emotional engagement is through material or process introduced by the instructor. Self-identity is not recognized, as the purpose of lecture is to efficiently relate information from student to teacher. Student knowledge, skill and ability are of little concern.
<b>Psychological</b>	Through lecture, a student may form understanding of the topic, but is limited to the ability of the instructor to explain and impart knowledge or skill.
<b>Social</b>	Social interaction is generally not warranted unless directed by instructor. Student need for social support and recognition is not fulfilled.
<b>Intellectual</b>	Student's understanding is limited to that of the instructor or learning materials and devices.
<b>Spiritual</b>	Transcendence from knowing to applying or assigning intrinsic value is based on the ability of the instructor to engage the previous elements and facilitate change.

The thesis of this article suggests that a method is most effective when it engages all six dimensions. The analysis above would indicate that a teacher-centered approach, using lecture, can be used effectively; however, the reliance on the instructor to fulfill all student needs may make this instructional environment unstable and too variable to guarantee consistent effectiveness. A type of codependence may occur in such a situation that would stifle the natural creativity, intellectual curiosity and growth that the students are capable.

### **Online Use**

Regardless of the instability of this method, it can be effective due to the nature of the learning objective when new knowledge or skill acquisition is not of primary concern, but rather the course is focused on reinforcement and application of previous knowledge. Therefore, the fulfillment of student needs to facilitate change is not required. If compared to the Salmon model (2003) or the Maslow model (Huitt, 2004), this method used in an online course could fulfill the developmental element of Salmon's model or the transcendence in Maslow model.

### **METHOD II: STUDENT-CENTERED**

The student-centered method is an approach that defines learning as an individualized, holistic, internal process that is controlled by the learner and is in a constant state of natural change and growth (Rogers & Freiberg, 1994). Guiding principles of this method include: adults are self-directed, adults are individual autonomous beings with goals, desires, expectations, and adults need democratic learning environments and experiences (Knowles et al., 2005). Students are responsible for the gaining of knowledge or skill and are expected to take the initiative to learn, under the guidance of the instructor. This focus shift from teacher-centered, in classic pedagogy, to student centered can be attributed to many factors. Growth in the literature and understanding of andragogy, increased adult participation in educational programs, and the variance of experience and abilities of adult learners are examples. The instructor in this method, unlike the teacher-centered approach, is no longer the focus of the learning experience and plays the role of participant, learning catalyst or facilitator and classroom manager. Due to the individualized, holistic approach of this method, it is well suited to engage all six dimensions as is exemplified in Table 4.

**Table 4.** Six Existential Elements of Student-Centered Approach

<b>Physical</b>	Student physical engagement is mandated to an extent by instructor who then allows the student to engage as much as they feel is necessary to fulfill course requirements. Students are encouraged to examine their environment in order to gain physical and personal comfort and security.
<b>Emotional</b>	Students are encouraged to define spiritual / emotional engagement through motivations or expectation statements, expressed socially or to themselves; hopefully solidifying expectations and intrinsic motivation. Self identification, and individual, personal identification is of great importance to this method as learning is considered an entirely personal experience.
<b>Psychological</b>	Fundamental understanding of the subject being analyzed is sought out individually and socially through information exchange and discussion.
<b>Social</b>	Fundamental to this method.
<b>Intellectual</b>	Limited by student who engages to the extent they deem necessary to fulfill course requirements or personal expectations.
<b>Spiritual</b>	This method is well suited to engage the previous dimensions and thereby create an environment conducive to change and growth.

There are situations in which this method may not be best. In work place environments where students are attending courses due to mandatory requirements, the intrinsic motivation of students that this method relies on may be highly variable with many unable to take the initiative for self study. When using this method in work related courses careful attention must be given to the planning of motivational factors or analysis of the actual motivations of the students involved; this approach may be best suited to academic institutions and courses. A technique fundamental to this method is social discussion. Table 5 analyzes social discussion in terms of the dimensional model.

**Table 5.** Six Existential Elements of Social Discussion Technique

<b>Technique</b>	<b>Social Discussion</b>
<b>Physical</b>	Presence is required, but the amount of engagement is left to the student to decide. Students respond when they feel comfortable and secure enough to do so.
<b>Emotional</b>	Students relate personal perspectives that are tied to experiences laced with emotions. The amount of emotional engagement is again student mandated. In social discussion, the individuality and personal experiences enrich the learning material and the sharing of such experience is encouraged.
<b>Psychological</b>	Personal understanding of material is shared, and actively or passively compared with the understanding of other participants. New perspectives are continually presented and through this process fundamental understanding and knowledge are formed.
<b>Social</b>	Activity is socially based
<b>Intellectual</b>	A Student's understanding is only limited by their initiative to learn and discuss the material.
<b>Spiritual</b>	As the previous dimensions are well engaged, and needs are met, transcendence is possible.

Based on the previous analysis, student-centered methods and techniques are highly effective in facilitating learning; effectiveness can be attributed in part to the collaborative focus of the method. Studies have indicated that socially based processes and activities increase learning, and current research is focused on defining specific factors that will increase the power of social learning (Cohen, 1994).

### **Online Use**

The online environment is particularly well suited to student-centered methodologies. The online environment affords an open forum where ideas can be exchanged and critically analyzed at length, engaging the intellectual dimension; this is not always possible in traditional classrooms that occur in real time. The individual motivation that propels the learning interaction also encourages social collaboration between all students; traditional classes, due to time and other constraints may not be well suited for open discussion nor allow every student an opportunity to participate (Smith, Ferguson, & Caris, 2002).

### **METHOD III: SUBJECT-CENTERED**

The subject-centered method is a philosophical approach to education rather than a quantitative process. The subject is given a voice of its own, just as real as that of the student's and instructor's (Palmer, 1997). Through the instructor, the students are connected to the subject and together they explore it. This focus on the instructor demonstrates the relationship that exists to teacher-centered methods, as proposed by Palmer (1997); however there are similarities to student-centered methods as well. The instructor is a participant and guide in the classroom, leading the discovery of the discipline being studied. Students are respected as individuals with experiences and perspectives of the subject and are encouraged to share them. Social collaboration is encouraged and expected.

This method is capable of engaging the six dimensions, and shares the strengths of the teacher and student-centered approaches as well as the weaknesses. There are differences in the two approaches; example of how subject-centered and student-centered approaches differ pertains to motivation. In the subject centered classroom the subject becomes a personal entity which motivates the students to explore it. The instructor's enthusiasm and skill in linking the subject with the student in a personal way are major motivating factors, rather than expecting motivation to be intrinsic or a natural phenomenon. Table 6 analyzes the subject-centered approach based on the previous definition.

**Table 6.** Six Existential Elements of Subject-Centered Method

<b>Physical</b>	Student physical engagement is mandated to an extent by the instructor. Security and Comfort needs are filled by the instructor.
<b>Emotional</b>	Students are recognized as individuals who have personal experience with and perspective on the subject being studied, however their engagement is determined by the ability of the instructor to link students with the material in a personal way.
<b>Psychological</b>	Foundational understanding of the discipline being studied is formed through association with experience of the discipline and through social discovery: discussion and exploration.
<b>Social</b>	Students are expected and encouraged to participate in personal discovery of the discipline in social ways. Mandated in part by the instructor.
<b>Intellectual</b>	Students are expected to become intimate with subject by exploring, discovering, expanding it in their own minds.
<b>Spiritual</b>	Transcendence from knowing to applying and assigning intrinsic value is based on the ability of the instructor to engage the previous elements and facilitate change.

A technique proposed by Palmer (1997) specific to this method is teaching from the microcosm. In this technique it is assumed that every discipline has a “holographic logic” that allows one to conceptualize the shape of the whole by examining any significant piece of it. This technique can be accomplished through social discussions of the topic and independent critical analysis activities or case studies of real world applications (see Table 7).

**Table 7.** Six Existential Elements of Teaching from Microcosm Technique

<b>Technique</b>	<b>Teaching from the microcosm</b>
<b>Physical</b>	Presence is required, but the amount of engagement is left to the student to decide. Comfort and security needs are fulfilled by the instructor.
<b>Emotional</b>	Emotional engagement is dependent upon how well the student is linked personally to the subject being studied. Each student is recognized to have understanding and perspective of the subject.
<b>Psychological</b>	The psychological dimension is engaged and
<b>Social</b>	Activity is socially based
<b>Intellectual</b>	Student’s understanding is only limited by their initiative to learn and discuss the material with others, and the instructor’s ability to motivate and engage; critical thinking is required in order to fully own knowledge.
<b>Spiritual</b>	Transcendence from knowing to applying or assigning intrinsic value is based on the ability of the instructor to engage the previous elements and facilitate change.

This method may be applied in many contexts, ranging from academic settings to work related trainings. Its focus on acquiring discipline related competencies may make it a valuable model for work related training. This method is also well suited to the online environment as social interactions and studies of real world application can be well initiated and managed in the online classroom.

#### METHOD IV: TEACHING-CENTERED

The underlying principle is that individuals learn best, or understand more deeply, when they must relate information and form understanding in others. There are similarities to active learning techniques, which are varied exercises that engage learners through participation; in research on effective teaching techniques, Galyan (1999) found that collaborative group exercises created an environment where all participants were both teaching and learning. However, as presented in this article, teaching-centered methods are focused exclusively on teaching as the learning objective. Method, as defined previously, refers to the ways in which people are organized in a learning activity. Students are the focus of teaching-centered methods, similar to the student-centered approach; however teaching is the primary technique whereby the learning-interaction is facilitated.

Through teaching, individuals gain subject matter expertise, the ability to communicate that expertise, and experience in applying knowledge. This method requires a great deal of individual motivation from students, similar to the student-centered approach. The instructor motivates as well by modeling dynamic and engaging teaching techniques or giving instruction and guidance in this area. Teaching is itself a scholarly activity, rather than an extension of scholarship (Gaylan, 1999) and therefore this method or approach may be best suited to teacher training.

This method is capable of engaging the six dimensions, however if not combined with other methodologies or approaches, it may not be as effective as a pure student, subject, or student-centered approach. Each student is given autonomy in order to discover the subject personally and then to teach their perspective and understanding. Like student-centered teaching, learning and understanding is formed through a social process. Table 8 lists the teaching-centered method's engagement of the dimensional model.

**Table 8.** *Six Existential Elements of Teaching-Centered Method*

<b>Physical</b>	Student physical engagement and security, is mandated to an extent by the instructor who then allows the student to participate as much as they feel is necessary in order to teach the material to the class.
<b>Emotional</b>	Students are accepted as individuals with strengths, weaknesses and understanding of the subject.
<b>Psychological</b>	Students form understanding through group collaborative efforts.
<b>Social</b>	Social interactions are fundamental to this method, as this is the means of knowledge creation and application.
<b>Intellectual</b>	Limited by students understanding and ability to teach the subject to others. Through a social process the subject is studied and expanded upon by the instructor and learner. Students are expected to become intimate with subject by exploring, discovering, expanding it in their own minds and relating their perspective with the class.
<b>Spiritual</b>	This method is capable of engaging the previous dimensions and thereby transcending knowing to applying.

The principle technique used in this method is teaching. In comparison to active learning strategies, where teaching could be used in role-play, or group interaction to reinforce, assess, or introduce understanding; teaching-centered methods are exclusively concerned with knowledge acquisition through the teaching process (see Table 9).

**Table 9.** Six Existential Elements of Student Teaching Technique

<b>Technique</b>	<b>Student Teaching</b>
<b>Physical</b>	Presence is required, but the amount of engagement is left for the student to decide. Safety and motivational issues may not be addressed if this method is used in conjunction with other educational approaches, such as student-centered.
<b>Emotional</b>	Emotional engagement is dependent upon how well the student is linked personally to the subject being studied. Individuality of the student is recognized and encouraged.
<b>Psychological</b>	Understanding if formed through teaching, direct application of knowledge socially.
<b>Social</b>	Activity is socially based
<b>Intellectual</b>	Student's understanding is limited by their initiative to learn and discuss the materials
<b>Spiritual</b>	If combined with other approaches, this technique may engage this dimension and facilitate development of knowledge.

### Online Use

Teaching-centered techniques can be used in conjunction with a student-centered environment. For instance, all students enrolled in an online class can be required to teach a portion of the course; thus, understanding of the subject, facilitating online learning, is formed through application by teaching. The effectiveness of the course may be attributed to the use of a method that corrects the weaknesses of the technique; the method and technique are mutually beneficial.

### DISCUSSION

A method should be chosen based on its capability to facilitate learning in terms of the discipline being studied and the ability of the instructor to utilize it. Economics may be, though not exclusively, suited to a student-centered approach while psychology to a teaching-centered approach. The previous analyses would suggest that methods that take advantage of the potential, skill, experience and personal creative power of students are the most effective in the online environment.

The student-centered and teaching-centered methods, based on their engagement of the dimensional model, have demonstrated effectiveness as a teaching/learning tool that is not entirely dependent on the ability of the instructor to facilitate learning. However, the teaching-centered method, due to its instability as a standalone method, would be best suited for courses focused on teaching. The student-centered approach, that utilizes techniques such as teaching, and social discussion, offers the most conducive environment to personal change and therefore would be the most effective method.

### CONCLUSION

Although there is no single instructional method that will guarantee effective learning and teaching in every situation, current research (Knowles et al., 2005) would suggest the need to address the personal and intimate nature of learning in order to ensure success. The methods analyzed in this article are contemporary practices that have the capability to engage the six

dimensions of existence, and thereby create an environment that fosters change; however, the most effective methods are those that engage the elements without dependence on resources outside of the student. The student-centered approach provides fulfillment of student needs, through the initiative of the student. The work of Maslow (Huitt, 2004) and Rogers and Freiberg (1994) and others has shown that individuals will naturally pursue the fulfillment of these needs and continually seek growth and development. The student-centered approach provides an environment whereby students may utilize their own resourcefulness and initiative to continually develop, grow, and fulfill needs without dependence on outside resources, and therefore is the most effective method.

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