

Active Learning should be Interactive

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Abstract

The paper focuses on the relevance of being interactive for effective communication as well as active learning. Teaching and learning are two way streets. Critical thinking plays an important role in receiving and sending information. However, it is equally imperative that the sent message is the received message for effective knowledge transfer. To bring various stakeholders together, it is important that they share the needs of each other. Rather than being offended by the differences that might exist for each group, they should focus on the means by which congruence could emerge and efficient and effective relationships could be established. It is important to consider the similarities and differences between the pure and social sciences. The case is made that interactive active learning methods will yield the best results in bridging the gap between and among heterogeneous human segments in social and professional settings. Common understanding of the unique information can shape our society better than letting the two parallel wings work independently. Several means have been discussed to unify in the diverse environment through effective communication.

Key Words: Active Learning, Congruence Development Means, Critical Thinking, Effective Communication and Interaction

Introduction

To make active learning interactive requires clear understanding of modes and models of effective communication. Bipolar existence of the methods used by the sciences and social and humanities fields has been evident for a long time. Technology has played an important role in bridging the gap between two lines of inquiry. Likewise, academia and industry have been perceived to be on different pedestals of creating and disseminating the information. Now is the time, to narrow the gap between these bipolarities and help people to understand the differences in contextual perspective for enhanced mutual understanding. Therefore, this paper addresses the following seven segments.

1. Effective Communication.
2. Contextual Framework
3. Sciences and Humanities
4. Academia and Industry
5. Common Interfacings
6. Examples from Personal Experience
7. Summary and Conclusions

1. Effective Communication

Webster's II New College Dictionary defines communication as transmission and "The exchange of ideas, messages, or information, as by speech, signals, or writing" [1]. Chowdhary defined communication as a process of exchanging information in a mode that assures a congruency between the intended message and the received message [2].

Berlo asserted that ineffective communication can yield twofold negative effects [3]. First, the message may not be understood as intended. Second, if received by non-intended receivers, it can become a cause of criticism. Berlo is credited with the introduction of SMCR model that represents Source, Message, Channel and Receiver. He also believed that for effective communication, compatibility between the sending and receiving groups is critical. Knapp highlighted the nonverbal dimensions of human communication specifically and stressed seven types: Body motions, physical characteristics, touching behavior, paralanguage, proxemics, artifacts, and environmental factors [4].

Fisher called communication as a social science that takes into account both scientific and humanistic perspectives. Fisher recognized that the scientific aspect of information has rational, generalizable, synthesizable and testable dimensions. The humanistic perspective was noted to be the interaction between the functional and evaluative selves within a cultural context in the presence of several social filters [5].

Knowledge communication has six attributes like culture. 1) It is transmittable. 2) It is transmutable. 3) It is learned. 4) It is shared.

5) It is communicated. 6) It is cumulative. An effective communication of information for teaching and learning purposes is a function of both verbal and nonverbal means of communication in general. In large organizations, it takes on the formal structure that is less flexible than what can be used in small group settings. Willey (2002) questioned if the information provided by mega-players of information through online databases is comparable and offers valid and reliable information [6]

It is evident from the preceding discussion of this section that for effective communication there needs to be compatibility in interpretation of various parameters to ensure that intended message is the received message. Therefore, considering context is very important. The following section discusses the relevance of contextual framework [7] offered by Kaiser within the context of clothing.

2. Contextual Framework

Kaiser [7] asserted that the contextualizing process allows people to see the changes in the meanings of the dress as contexts dissolve into each other. Kaiser used four assumptions while describing the contextual framework. 1) Meanings are altered and enriched within the context. 2) Meanings are result of the process of historical and fashion change. 3) Confusion and continuity make social life complex. 4) Discovery of meanings of appearance and clothing is an exploratory process. Chowdhary [2] expanded on the assumptions with examples at individual, societal and cultural levels. For example, an individual might dress differently for different occasions. However, social setting may dictate the dress for the same individual. The individual might wear a cap and gown for the graduation event, mourning colors for the funeral, and uniform for the professional attire. For cultural identification, the same individual might wear a Scottish kilt, Indian Sari, Japanese Kimono, Chinese Cheongsam or Chipao, Korean Hanbok, or Nigerian buba, dashiki, and agbada. For within a culture, one can see that jeans were considered the clothing of rebels in the 1960s and mainstream since 1990s in the United States.

The preceding examples support the first two assumptions of the contextual framework. Midriff exposure is considered both modest and immodest in various cultures and within different social contexts within the same culture. It can lead into interpretive confusion for the perceivers as well as the perceived. At societal level, globalization has fused east and west in many ways. At the same time, societies want to preserve their cultural identities. This results in confusion too. People continue to understand and interpret social norms for which change is not inevitable either. Therefore, it is a discovery process that allows us to unfold and refold the existing meanings of appearance and dress for ourselves and those around us.

3. Sciences and Humanities

Science is a discipline that requires in-depth investigation of natural phenomenon for reliable and valid results. **Humanities** focus on the culture of human beings that includes the art of living through relationships and their impacts.

Physical Sciences are believed to be hard cored and more concrete in its existence and interpretation than the social sciences which can be more interpretive. Humanities draw from people's attitudes, behaviors, values, moods and contexts. Therefore, they are more close to the social than physical and natural sciences. Accuracy of prediction is more critical in the physical sciences and more relative in the humanities and social sciences.

Consequently, natural sciences express information in equations and symbols that require fewer words to get the idea across. However, in humanities one deals with understanding of relationships between and among individual and social norms, cultural norms and contexts. Therefore, subjectivity enters the equation and calls for the use of more words, expressions, and examples to make the point.

4. Academia and Industry

True education is a process of teaching and learning that offers opportunities to grow for both students and teachers. It cultivates inherent talents, offers resources to learn about the content, provides opportunities to develop critical thinking skills, refines reading, writing and speaking skills for effective communication, and creates caring and sharing environment.

Miltich [8] reported that no matter how well a teacher teaches, the final learning depends on the learner. All teachers have their own stories of climbing the professional and learning ladder. No one assessment program can tap or explain them all. Once people become master of their own learning, they get immeasurable outcome of joy and learning. They begin to recognize the good teachers, good content. Only the learner knows when the discovery ended and real learning occurred for the concept. Of course, learning is an ongoing process. The moment maximization of the learning occurs, one begins to apply and expand it in variety of different ways. Such practices and experiences lead to other meaningful outcomes that were unforeseeable in the past.

In academia, time is less critical factor than in industry. In industry time is money. There is a diverse group of stakeholders who want profit from their investments. One can only use tested knowledge that will result in gainful outcome for both the workers and the management. Industry has to respond to change much faster than it is needed in the industry. Therefore, time management as well as skill using abilities have to be more flexible than the academe where time management is critical but not as demanding.

Spencer [10] noted that active learning and teaching yield better results than the passive modes. However, it is important have professional development opportunities that garner the skills for promoting interactive learning and teaching for getting rid of learning misunderstandings from the passive modes of teaching. Tillman [10] believes that online courses have emerged from the business models that focus on higher enrollments and lower student contacts. Some strong advocates of the online programs assert that their courses are highly interactive because they use satellites for allowing pictures and sound in their classes. However, every institution does not have access to the high tech exchange of information. Tillman (p.105) quoted,

“Merely reading a book,
watching a videotape, or thinking
really hard about a subject is not enough. One must be socialized
into the community of knowledge
to become truly educated, whether
in music or anything else, and that
seems to be something online
education, more often than not,
has a difficult time providing.”

Tillman’s intent should not be misunderstood. It suggests that one should offer online courses only if they have the hi-tech needs met before offering the courses than after offering the courses. Of course, it is hard to determine if the cost of technology and increase in enrollment are cost effective alternatives for effective teaching and learning environments across the board in academia. Time and time again, it has been proved that industry has benefited a lot with use of high technology only if they were large scale companies. For small scale companies high-tech machinery does not justify returns on investment. Obviously, advancements in telecommunication technologies have globalized the world in a speedy manner and has cut the production cycle and travel costs immensely in a variety of fields. However, some fields where products require touching and feeling for consumer satisfaction, benefits are relatively smaller than the where pictures can present 100% accuracy.

Boyle [11] noted that teaching and learning become different during the time of national crisis. It is function of the changing meanings of same actions and expressions. Even though some might argue that it is not fair from academic freedom standpoint, one has to face it from national security standpoint. Students begin asking different types of questions and teachers have to think differently, for responding appropriately and thoroughly.

The proceeding information discusses the true, learning process, teacher's role in the learning process, goals for students, and goals for the teacher.

A) True learning process

True learning is a fusion of the following four factors in an academic setting.

1. Caring and sharing environment that offers equal access to resources and facilities for every qualified member of the institution.
2. Curriculum that offers research-integrated teaching and teaching-integrated research as its integral elements.
3. Teaching methods that use multidisciplinary and multi-media approaches to make a learner think critically and comprehensively. The multi-method approach used for the purpose should accommodate for affective, behavioral, cognitive, and information processing skills.
4. Supportive administrative body that encourages ongoing self-monitoring of contents and processes by the learner to update the knowledge base and its applications.

B) Teacher's role in the learning process

In my opinion, a teacher plays multiple roles as an educator.

1. A teacher serves as a:
 - a. Presenter, introducer, and/or creator of the knowledge-base;
 - b. Facilitator for providing various information seeking and processing tools and systems;
 - c. Stabilizer to reduce anxiety level of the learner; and
 - d. Validation to affirm that learning has occurred for the learner.
2. A teacher facilitates learning process by using diversity of knowledge delivery and evaluation methods so that it has something for every learner.
3. A teacher performs as an effective communicator and leads learner to reach higher levels of thinking, and furthers the career path by providing appropriate skills to advance toward the desired goal.
4. A teacher teaches by example or guides as a mentor.

C) Goals for Students

Five goals are set for the students: Be effective communicators, open-minded, moral and ethical, self-disciplined and accepting of the challenges of higher level learning.

1. Be effective communicators.

Cultivate this behavior by offering a variety of evaluation methods that consider diversity of inherent talents and learning styles. The evaluation techniques include quizzes with true/false statements, matching items, and multiple-choice tests; in-class group activities, short papers with written submissions, and oral presentations, debates, problem-solving by designing and computing, and mere attendance. Invariably, most students perform better on one type of testing than other.

2. Be open-minded with active frame of mind.

Include in-class activities that encourage students to think and explore different options. This also allows for intellectual creativity because students are forced to think outside the box. I offer them opportunities for integrating affective, behavioral, cognitive, and information processing skills in a creative and reasoned manner.

3. Practice moral and ethical work habits.

Expect for students to respect physical and intellectual property of the institution and people. The student is directed not to take credit for what is not their work.

A need for appropriate acknowledgement and documentation is emphasized as a professional courtesy. Written projects calls for appropriate documentation within the text and corresponding listing on the reference list.

4. Self-monitor your learning activities.

Learners should take initiative to watch their own growth and development, and seek out resources to achieve their goals. I facilitate so by introducing activities where both individual and group leadership have integral roles.

5. Accept the challenge of learning higher level skills.

Learners should progress toward learning higher level skills and continue to practice once learned. Based on Bloom's taxonomy of linear progression, the learning process moves from knowledge acquisition and identification to comprehension, application, analysis, synthesis, and evaluation. Students should be able to move from memorization, recognition, and association skills to exploring, justifying, and recommending skills. Integration of skills can happen at any level to critically evaluate the options and establish priorities. It can be facilitated by offering caring and sharing environments where each member gets an opportunity to be a key player.

D) Goals for the Teacher

In an interactive environment, the teacher should have the following five goals.

1. Serve as a facilitator through:

- a. Generating passion for learning;
- b. Stimulating critical thinking;
- c. Emphasizing ethical work habits; and
- d. Rewarding good behavior and performance.

2. Be an effective instructor by:

- a. Offering and following through clear instructions;
- b. Providing a list of resources and accessing mechanisms;
- c. Explaining required assignments;
- d. Describing evaluation procedures;
- e. Stabilizing students' learning process by taking time to answer questions and reduce anxiety; and
- f. Validating learning outcomes by using pretest-posttest or posttest only methods both qualitatively and quantitatively.

3. Be an advocate of integration by:

- a. Facilitating the process of combining old and new knowledge;
- b. Testing the newly created knowledge; and
- c. Constant updating through scholarly activities.

4. Promote punctuality by:

- a. Serving as an example;
- b. Rewarding timely submissions; and
- c. Taking points off for late submissions.

5. Engage students in active learning by:

- a. Developing activities that force learners to think critically;
- b. Listening carefully,
- c. Reading intelligently,
- d. Writing effectively, and
- e. Speaking eloquently.

Active learning in the academic setting is a function of effective communication between students, teachers, administrators and support staff. Active learning in industry is a function of open communication between executives and workers. Interactions alone can help both groups understand each other. Cross-training across tasks and fields can further facilitate the interactive environment. All these efforts can collectively contribute toward effective communication.

5. Common Interfacings

Despite the within framework variations within and among various constituents, there are some common interfacings that tie the diverse groups. Some examples include, desire to be successful, passion to do it well, effective oral and written skills, availability of professional development, existence of audio-visual resources, existence of moral and ethical practices, drive to make things better, commitment to high standards of quality, and embracing the idea of change for positive outcome and not for the sake of change. Sciences and humanities, as well as academia and industry can flourish with the use of common interfacings. Gaps can be bridged by working on collaborative projects between the experts from sciences and humanities, as well as academe and industry.

6. Examples from Personal Experience

I have consciously used the concept of active learning in my classes. I am providing you with five examples.

- 6.1 Understanding Maslow's theory of hierarchy of needs. In class, give my personal examples and ask students to share their personal examples for each of the needs identified by Maslow. For assignment, I ask them to use their personal experiences that apply to the framework. Interactive approach in class and reinforced learning through assignment helps them understand the model and retain information better.
- 6.2 I do same thing with Mead's development of self. Students have to come up with the examples for each of the stage that relate to appearance and clothing. Group discussions of personal experiences as well as photographs are used to understand the development of self. In writing-intensive courses, students are given the opportunity to revise their assignments.
- 6.3 In another assignment students used Adamson, Hartmann and Lyxell's different types of self and apply to clothing and appearance related aspects for knowing themselves better. The exercise deals with relating me, experiencing me, seeking me, as well as the introspective me. It allows students to weave their personal experiences for understanding the theoretical concepts developed by others.
- 6.4 In science based courses, my students do annotations. They have to present their annotation in the class. Interesting discussions result when more than one student uses the same journal or magazine article. Likewise, group activities are organized where students have recorders and presenters. Over the entire semester, each student has to serve as recorder and presenter at least once. This way, students develop higher level of confidence and develop better understanding of the information. It amazes me how beautifully students develop and present concepts with defensive attitude, who will not utter a word if asked an open question. They also do a group project and test a fashion fabric and lining to pass or fail for the intended use after executing standardized tests. The outcome is a paper with oral presentation that also includes a one-page technical data sheet that is designed for the executives of the industry who have limited time to read elaborate projects for decision making.
- 6.5 Holding debates on the controversial issues with rebuttals as well as opening and closing statements teaches students assertiveness as well as spontaneity for defending their view points. It also helps them have first hand experience of looking at both the supportive and controversial aspects of the issue.

- 6.6 Having materials peer-reviewed teaches students to improve the clarity of students' work and nurture accepting positive criticism of one's work without severe penalties. Revision element is also of critical importance because it allows students to rectify the problematic areas of their work. Teacher can offer feedback either for a grade that can be revised or without a grade.
If grade is given for the first attempt as well as the revised version, one should take the average of two for the final grade of the student to be fair to those who did an excellent job in the first attempt.
- 6.7 Using problem solving approach and having problem-based learning also enhance application as well as comprehension of the materials covered.
- 6.8 Having labs or studios definitely adds to the focus on learning because students have to implement theory into practice on an ongoing basis.
- 6.9 Using local museums, international visitors, and library resources that would collectively help with comprehensive understanding about the artifacts and mentifacts (value-driven symbolic objects).
- 6.10 Mix micro-themes and large projects to allow for more frequent feedback and learning in piece meal before undertaking the large project. However, the micro-themes could be designed to create a learning ladder for completing the group project successfully.
- 6.11 Use multi-method approach to teaching and evaluating learning. I believe that it enhances retention power of the learners.

As evident from the examples above, I have chosen to make active learning interactive. I believe that it allows teachers to eradicate confusion from students mind, and it allows students to improve clarity and understanding of the material taught. I see it as a mutually rewarding experience that consciously and unconsciously refines the students' learning skills and outcomes as well as teacher's effectiveness. The list above only represents sample of the possibilities and can be extended to meet requirements of both virtual and real learning environments.

7. Summary and Conclusions

Active learning can be interactive only if a conscious effort is made to design assignments that use interactive environment and have the possibility of revision based on the constant feedback from the key players. The key players can be teachers, business partners, peers, bosses, community members, celebrities, and/or family members. For effective communication, it is as important to understand the commonalities as it is to recognize the differences. Interactive environments provide an opportunity to minimize the differences and develop congruity with understanding of the knowledge base under consideration. Interactive learning reduces misunderstandings and creates an environment of open communication. It does not matter how much advancement occurs or exists in technology. If we do not use it well as the only or assisted tool, its existence can be useless. To conclude, teaching and learning environments can yield better results if learning is made both active and interactive. Active learning becomes interactive only after one receives a criticism or reinforcement through feedback from authorities about the validity of one's interpretation. Learning is a lifelong process and sharpening one's skills and making appropriate changes continually as a logical extension, happening and need to keep the teachers and learners excited about what they choose to do or what they are expected to do in the learning environments and communities.

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