Transforming Work Environment Into A Learning Environment: An Analysis On Theoretical Perspectives

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Abstract
The paper analyses the theoretical framework on how to transform a work environment into a learning environment in higher education. Nevertheless, learning is a dynamic process and it takes place both in the body and as a social activity. The role of educators is to focus on creating learning environments rather than trying to drill knowledge into people. However, getting a perfect praxis of the “learning environment” in higher education is difficult due to the continuous changing educational paradigms and for the contextual differences of the educational environment. Thus, educators must have the theoretical understanding and ability to contextual operationalization of those theories in creating the appropriate learning environment. This article will help the educators to find answers on how can different work environments be transformed into a learning environment? The literature review method as the secondary data source has been used to prepare this paper. The study concluded that knowledge is everywhere and learning happens at local, social, didactic, technological environment along with its physical environment. Educators and educational institutes of this 21st century should focus on inclusive environment in creating the successful learning environment. No theory alone is fully recommendable for contextual differences of learning spaces and time. However, collaborative and authentic learning approaches can be useful tools for choosing learning strategies towards transforming workplaces into successful learning environments in future.

1. Introduction
In theory, learning is both a process and an outcome of education. As a process, it is a part of living in the world and the part of the way our bodies work. As an outcome, it is a new understanding or appreciation of something (Smith, 2015). Consequently, learning takes place both in the body and as a social activity. The role of educators is to focus on creating the learning environments rather than trying to “drill knowledge into people”. However, getting a perfect praxis of “learning environment” in higher education is difficult due to firstly the continuous changing educational paradigms and secondly for the contextual differences of the educational environment. The learning environment is not a static idea. It is dynamic and requires continuous changes and adaptability in terms of curriculum contents, forms and methods of teaching and application of information technologies. Consequently, this article has chosen to deal the core question; How can different work environments be transformed into learning environments to learn and develop theoretical blending of different ideas for assessing and transforming the learning environment.

2. Material and Method:

3. What can be a good working environment?
This section discusses the components of working environment in different organizations. The intention is to shed light on the elements that increase the productivity of the employees in different organizations then the elements that influence the quality and productivity of teachers at educational institutions. Abdul Raziq (2015, 718) points out, working environment is composed of two broader elements; work and context. However, the sub-elements of working environment are employee’s safety, job security, good-relations with co-workers, recognition for good performance, motivation for performing well and participation in the decision-making process in the organization. These elements have impact on job satisfaction. According to Johnson et al (2011, 1), teachers are the most significant school level element in student’s progress and achievement. The elements of teacher’s working environment include; the physical teaching environment (e.g. safety and comfort); the economic
factors (e.g. pay and job security); assignment structures (e.g. workload and supervision); cultural and social elements (e.g. strength of the organizational culture and characteristics of colleagues and students). In addition, the relationship between the teacher and their colleagues affect the teacher’s performance at their work. Yin et al (2016, 2) point out, teachers’ engagement at their work mediated their colleague’s co-workers’ support and their mental health. Meanwhile, other job resources like teacher autonomy and social support, the trust between the teacher and their colleagues are considered as a fundamental work environment resource, since the trust plays a vital role in social interaction.

The study of Greef et al (2004, 9) showed that; (i) organization with a high overall quality of a working environment, including good housekeeping, has a good margin of productivity, but organization with a poor working environment could seldom achieve a good margin of productivity; (ii) the level of cooperation between employees and the management could be an important indicator of the productivity of the organization; (iii) it is proved that through adopting new methods of working and equipping the organization with the proper equipment’s needed for the work, it is possible to decrease the amount of physical work, but increase the margin of productivity. However, it is not always easy to change the existing old working methods to which people are accustomed; and (iv) creative solutions for the work problems increases the competence of the organization and reduces the accidents inside it. Johnson et al (2011) stated that the most effective elements on teachers’ productivity cannot be limited to elements like clean and well-maintained facilities or the access to modern technology; since the key effective elements on teachers’ performance and productivity are the school’s culture, the relationship among colleagues and the principal’s leadership. Finally, does a student's perception of the teaching environment influence at all their learning? As Mayya et al (2004, 281) states, there is a positive relationship between students’ perception of the work environment in an educational institute and their learning process inside this institute. A pivotal tool to help students understanding the work or learning environment is a meaning orientation. Meaning orientation has a positive influence on the five scales of the educational environment. These five scales are students’ perception of teaching and learning, teachers, academic atmosphere, social and self-perception. The gender differences in the perception of learning environment are sometimes a result of academic or cultural contexts with criteria.

4. Definition of learning environment

For the emerging use of information technologies and the application of a constructivist approach in knowledge and learning, the learning environment has increasingly become significant as one of the strategic centers for lifelong learning (Kuuskorpi & González, 2014 in Kuuskorpi edt. 2014). The learning environment mainly emphasizes the relevant context and necessary supports for facilitating education towards learning. In brief, learning environments are the structures, tools, and communities that inspire students and educators to attain the knowledge and skills (http://www.21stcenturyskills.org/route21/). From comprehensive perspectives, the learning environment encompasses learning resources and technology, means of teaching, modes of learning, and connections to societal and global contexts including human behavioral and cultural dimensions of learning (Tom Warger et al, 2009). The learning environment is divided as an active learning environment and a passive learning environment. The active learning environment is a learner-centered dynamic environment. Teachers or instructors become facilitators for learning and students assume responsibility for their learning. Thus, in an active learning environment, students engage in the process of building and testing their own mental models from the information that they are acquiring. The passive learning environment is teacher-centered and the predominant learning environment encountered by students (Modell, 1996). In addition, a traditional definition of a learning environment categorizes learning according to five different contexts: local, social, didactic, technological and physical (Kuuskorpi, 2014).

4.1 Types of learning environments: where does learning take place?

The traditional idea of a learning environment is that learning takes place in physical environment at schools, in the classroom and at the library. However, in this technology-driven world,
today the learning environment can be virtual, online, and remote along with formal places and spaces (Manninen et al. 2007). Consequently, learning has no boundary of places and it can happen anywhere, any time. However, educational experts of the 21st century viewed that learning must take place in contexts that “promote interaction and a sense of community that enable formal and informal learning” (Manninen et al. 2007). Thus, the learning environment is a combination of individual behaviors in context and everybody contributes to what that environment becomes. This is the responsibility shared by teachers and students. The following figure -1 represents the learning environmental context in the 21st century (Kuuskori 2012):

There are four basic elements to be the essential aspects of a physical learning environment: societal, informal learning processes, individuality, and formal teaching. These elements form an interactive whole in which the physical learning environment plays a central role in reforming the school’s operational culture. Impacts of a learning environment (http://www.21stcenturyskills.org/route21):

- Creates learning practices, human support and physical environments that will support the teaching and learning outcomes
- Supports professional learning communities that enable educators to collaborate, share best practices, and integrate skills into classroom practice
- Enables students to learn in relevant contexts (e.g., through project-based or other applied work)
- Allows equitable access to quality learning tools, technologies, and resources
- Supports expanded community and international involvement in learning, both face-to-face and online
- Learning environment affects students' and teachers' abilities.

4.2 Factors of a learning environment:

Environmental factors have significant effects on pupil and teacher well-being. The important factors (Appleby, 1990) in learning environment are; (i) school furniture and equipment; (ii) technological tools and supports; (iii) interior design; (iv) lighting; (v) air quality; and (vi) acoustics. Finnish perspective on learning environment: The Finnish National Board of Education (2014) has considered that the physical learning environment has a clear effect on learning outcomes and contentment in school. The contents of education forms and working methods are changing rapidly with the advent of societal phenomenon and technology. Consequently, old school facilities and traditional idea of learning environment do not necessarily support the present and future educational practices and working methods in the best possible way. Thus, learning environment should be assessed, evaluated, redesigned and built according to the demand of time towards interactive learning (Kuuskorpi, 2014).
5. Transforming work environment into a place of learning.

First, we must define what is meant by a place of learning and where intellectual growth takes place. According to Peter Senge (1990, 3) learning organizations are: organizations where people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning to see the whole together. Senge writes in his book *The Fifth Discipline. The art and practice of the learning organization* (1990) about five different elements that build and sustain learning organizations such as; systems thinking; personal mastery; mental models; building a shared vision; and team learning (collaborative learning).

*Systems thinking* is a framework for seeing inter-relationships that underlie complex situations and interactions rather than simplistic (and mostly inaccurate) linear cause-effect chains. Putting it simply; systems thinking is “a way of seeing and talking about reality that helps us to better understand and work with systems to influence the quality of our lives” (Kim, 1999).

*Personal mastery* is “continually clarifying and deepening our personal vision of focusing our energies and developing patience and seeing reality objectively.” (ibid., 7) According to Senge, organizations learn only through individuals who learn. Nevertheless, it in itself does not guarantee the organizational learning. (Senge 1990, 139) People with a high level of personal mastery are in a continual learning mode and they are questioning their own acts (Huhtanen, 2007).

![Diagram of Personal Mastery](image)

**Personal Mastery (Huhtanen, 2010)**

Peter Senge describes *mental models* as beliefs, values, different mindsets and assumptions that determine the way people think and act (Senge, 1990, 8). Our acts are controlled by these mental models and they are often unnoticeable and routine-like. Being aware of our mental models help us to discharge them and help us to find creative solutions, that otherwise may be hidden under these models. (Huhtanen, 2007, 2010) Peter Senge has argued that when there is a *shared vision*, people learn, because they want to learn, not because they are told to learn (Senge, 1990, 9). Shared vision is important to achieve common objectives. Each member of the group needs to have the same kind of understanding about the organization’s future and activities. The shared vision is achieved through open discussion (Huhtanen, 2010).

*Team learning* is built on personal mastery and shared vision (Senge, 1990, 236). Team learning and expertise is formed in an environment where activity is reciprocal and the community has its shared stories and concepts. The community has agreed on how they are dealing with civil issues and they have shared knowledge about them. In this kind of learning environment knowledge and innovation develop rapidly; and conversation and interaction follow each other. Participants should
have a common understanding of community members and what each person knows, but also what their strengths and weaknesses are (Wenger, 1998, 125-126).

In creating a good learning environment based on collaborative learning, we should focus on the Leppilampi’s definition. According to Leppilampi (2002), collaborative learning is a social structure, which supports independency and releasing. Learning together encourages helping among the group and enhances students to learn from each other, which leads to a social change. In this social change openness, dynamism, group discussions and processing them take place. The learner is seen as an independent thinker, self-articulated, self-motivated personality, who takes responsibility of his or her learning. A good collaborative learning environment includes; (i) interactive communication; (ii) positive interdependence; (iii) the collaborative learning group succeeds in its task through personal responsibility; (iv) practising social skills and dialogue skills is an essential part of collaborative learning; and (v) pondering and evaluating issues together.

A good example of an authentic learning environment is the Dialogical Authentic Net Learning Activity (DIANA). It is originally developed for online learning, but the principles of the DIANA-model are suitable for any learning environment. According to the DIANA-model the learning process proceeds authentically and dialogically. The cornerstones of learning are: (i) creating a common foundation for learning; (ii) the authentic progress of learning; (iii) dialogic modes of operation in learning; and (iv) reorienting learning and developing know-how. Dialogical basic principles in (online) discussions are (Joutsenvirta, 2007): 1. Active participation, 2. Commitment to the discussion/debate; 3. Reciprocal attitude and response; 4. Open and sincere expression; 5. Respectful attitude; 6. Dialogue, which is free from self-centeredness; 7. Expressing and accepting developing ideas; 8. Creating common understanding based on different perspectives; 9. Asking inquiring questions; 10. Asking proper questions to open participant’s personal significances; 11. Making participant’s thoughts visible; 12. Questioning and exploring a participant’s thoughts and 13. Progressing in conversation is based on a participant’s perceptions, not speculations of thoughts.

Marina Kinnunen (2010) has studied an interesting aspect of learning environments in her study Virheistä oppimisen esteet ja mahdollistajat organisatsiossa (Learning from errors in organization - Factors preventing or making it possible). Learning in organizations has widely been studied over the decades by several researchers e.g. Argyris, Schön, Nonaka & Takeuchi and Senge. According to Chris Argyris, a learning organization is an organization where its members are constantly questioning their activities, finding errors or abnormalities and repairing them by renewing their own and their organization’s activities (Argyris, 1990, 4). Making errors is normal human behaviour: “To err is human”, even though we as humans do not want to make errors deliberately. People make errors from various reasons; when they are interrupted; and they are tired or exhausted etc. People also learn to work so that the consequences of the errors they have made are repaired while working, thus making it hard to notice them. Senge (as cited in Kinnunen, 2010) argues that today’s problems are caused by yesterday’s solutions. According to Kinnunen, Nonaka & Takeuchi (1995) have stated that it is impossible to avoid error-making completely, but we can learn from errors. Errors and failures enable learning in both the organization and with the individuals. They give readiness for change to the organization and inspire organizations as a whole to learn more.

According to Garvin (as cited in Kinnunen 2010, 35-37) the basic elements of a learning environment are: 1) systematic problem solving, 2) testing new methods, 3) learning from own experience and history, 4) learning from each other, 5) comprehensive and effective communication. Implementing a learning environment’s key factors into practice is not an easy task. Within two decades it has been shown in different studies, that supporting a good learning atmosphere, concrete learning processes and practices but also leadership, are the key factors that are essential to a learning environment in organization.

Kinnunen (2010, 144 – 152) identified the results of learning from errors are: 1) open and trusting environment, 2) system thinking, 3) commitment of management and support of superiors, 4) systematic and responsible communication and discussion, 5) positive attitude of development and 6) facilitation from learning away of something. The obstacles of learning environment are: 1) blaming,
2) passing errors without explaining the reasons, 3) not giving space for discussions, 4) nobody takes responsibility from learning, 5) being in a hurry. Errors can lead to positive consequences, even to new innovations. In a good learning environment, the errors should be accepted as a part of the learning process. A psychologically safe and not blaming environment will help learning in an organization.

6. Collaborative and authentic learning as means: the pros and cons

In the future classroom the meaning of diversity, many-sidedness and versatility are emphasized. They are seen as positive factors in learning. This means that the attention in teaching is on functional work forms and learning at the workplace (Numminen & Ouakrim-Soivio 2007, 32). The work environment as a learning environment has many factors to consider; thus using just one theory and “tools” might not be efficient. One should always think about the needs of the learners, workers, students and the whole working environment. Often a holistic view is emphasized rather than a narrow view of how to create a good working environment. In this paper, the concentration has been on collaborative and authentic learning. Also, these theories and ways to teach/learn can be used as a combination or together with other theories and ways to create an even more holistic combination, but the learner’s individual characteristics should never be forgotten in the process. As mentioned before in the text, it is very important to consider how the learning environment is built up and set up physically. Do we work in cubicles or in an open working environment? Are we more connected to other people through Internet or face-to-face? Depending on the project and it’s nature these factors are importantly relevant. Do we just have a big noisy hall or is there a place for individual work that needs peace and quiet? A good chief/project leader must be an expert on creating a good working environment for every project or if the work is a long lasting one, a work environment should be enjoyable in the long run. Here we talk about customization and convenience, also comfort, which easily also turns into discomfort. Some workers who would otherwise be very good but have e.g. agoraphobia or social phobias can be very anxious in open spaces, but in different kind of surroundings these individuals may thrive e.g. working from home and through online applications. Many managers/executives are experts in their own field and do not understand much about the working environment as an effective learning environment. They do not know where they can hire experts in the field. The changing technology might not be understood by the one in charge and thus making it impossible to create a good working environment and even a bad work-based learning environment. A good question is should workers and learners leave their personal life outside their work? Should hobbies be included or not? (see Hagel, Brown & Samoulova. 2013, 21-24).

Personal well-being will help the individual’s personal learning, but also hinders it from happening if not implemented well. In today’s societies workers might have many roles and executives and companies must become comfortable with the idea that workers (also as learners) moving to unfamiliar roles initially may not be as productive while they learn new skills. This can become a real pro, but can also work against a leader or company (or work-based learning environment) thus becoming a very big con. Traditionally executives and companies have seen workers as beneficial and as income only; when they are in their own role where they can act the strongest. It is often also in the traditional way seen that certain professionals must be hired to achieve the best goals. This is the “old tried-and-only-true way”. It is not often seen that time spent studying challenges is not a cost, but rather an investment in a stronger future worker (see Hagel, Brown & Samoulova. 2013, 10-11). In the authentic learning models, for example the worker and learner can be seen more like an “interdisciplinary” asset with deep knowledge about various subjects and who are not "compartmentalized” into too small subject areas and who can also apply their knowledge and skills in many given situations in learning, work (career), civil life and even crisis and failure (Abbott, 2013).

It is also important to see and understand that the first idea is normally not the best. This means that different solutions for work-based learning environments should be tried out; and also individual skills, needs etc. should be considered to achieve the best results. The environment should not be stale, but it should give room to experimentation and rapid changes, otherwise a lot of resources for learning in a work environment might go wasted. Failing quickly and inexpensively during different projects will teach the whole team a lot for the future. One should not be afraid of this. Under...
a good boss/teacher challenge-specific teaming might be a good solution, but it can also fail miserably if it cannot bring certain types of experts, workers and learners together. Important for either making it or failing might also be “vote with your feet” tactics. In this way groups might become better in group spirit and enhance learning at the workplace. Third parties should be included in these processes as early as possible and not seen as a threat to the group or project (of course some projects are more or less secret and corporate espionage is often also a very big issue). Often third parts are only a part of the very last parts of the work process (often testing the final “product) (Hagel, Brown & Samoulova. 2013, 12-14, 16, 17).

Technology has become more and more accessible for people. Technology can lead to better understanding and learning. We are more connected than ever through different kinds of technology; social media, big data, cloud computing etc. This has lead to a performance enhancement in how individuals and groups can learn fast and be connected like never before in human history. Workers/learners are able, with the help of technology, to connect with people who can help them achieve greater levels of performance easy and fast, both inside their own organization and also outside of it. Making connections meaningful during even lesser projects might strengthen the future collaboration and learning through each other’s work (Hagel, Brown & Samoulova. 2013, 8, 17, 18).

But not all progress and technology are always good for an individual’s learning, well-being and even an individual’s whole mental state. As technology keeps on developing at a high speed, the individual needs might be overlooked. Technology might also take us further from the green attributes or values and cause dilemmas in the individuals or groups values. In our Western society also the concept of time and the overall illusion that we have so little of it might be a huge issue for people’s health. We need to eat fast, work fast, and learn fast! Technology is often seen as something taking us forward in development and embraced like almost a “savior” to our existence. But there are factors that sometimes make information hard to reach and one factor is the lack of good technology of a good computer or Internet access. Even geographical distance might be something that either helps or hinders both the individual, but also the group or organization. Also the lack how to use the technology, a learner’s lack of knowledge how to use these tools, might become an issue. It might also be very time-consuming to learn all the new technology demanded the worker/learner should know. Also the massive amount of information available today can lead to an overpowering feeling for the learner. The learner feels “suffocated” because of the enormous amount of material and cannot decide on which material is relevant. Also searching through all the information available might become very time-consuming (see Lee 2014, 13-16). Harrison talks about a learning landscape that is vast. But when does it turn into something that is too vast? (Harrison, 4-5). When is too much collaboration and contact too much for a worker/learner (and also the teacher)? Of course here the individual traits play a big role (identity types).

But as for some learning environments, like the one built upon the authentic model, Critics may argue that there is too little information available for the learner and because of that it might be seen as something too narrow as the learner would not have an big enough basic knowledge. Or in academics enough academic content in the central subject areas to guarantee that students acquire a wide-ranging, balanced knowledge base (Abbott, 2013).

One of the major problems for learning and data that is gathered is the possible loss of that data. Where should it be stored not to be lost? Should all data be written on paper and stored in a safe place or carved on stone to have it last longer? This would with the amount of information today lead to too massive archives. So how should the data backups be made? We also have the issue about security for the data gathered. When does the data become too personal etc. As the technology develops very rapidly, the answers to these questions are still changing all the time (see: Attwell 2007, 5, 7).

As discussed earlier the importance for a working environment to function as a good learning environment we need cooperation (collaborative also cooperative learning, team based learning etc.). But for this people really need to understand each other to successfully learn anything and to produce new (meaningful) information. Now we also come in on the concept of beliefs and different cultures and cultural diversity. This might work as enrichment, but it can also hinder the work and learning
“flow”. Also age difference and the gap between generations can lead to misunderstandings or even misunderstandings in the spoken or written language. Many factors can even lead to bullying at the workplace and make it harder or even impossible to work or learn. So it is just not factors based on ethnic culture that might cause problems, but these factors may also have to do with culture within a culture. Further factors in individual’s personality, that means factors in a person's self, like shyness can lead to a certain amount of isolation and the key for a successful work-based learning environment should be real-time feedback and reflection. This also has to do with effective timing on the feedback. Too much negative or only positive feedback will lead to problems. The same goes for reflection; both positive and negative outcomes must be discussed and reflected upon (Hagel, Brown & Samoulova. 2013, 14-15).

Work learning environments can lead to better learning and understanding, but they are not always beneficial and can also cause problems for collaboration and learning. One must watch out for these challenges (even dangers) in the creating and building different working/learning environments. With all the plusses and minuses combined this kind of learning environment still creates a very unique mixture of learning patterns. A work environment that can incorporate meaningful challenges into a workers/learners everyday work life, can drive worker motivation further thus leading into new performance levels and also better motivation (Hagel, Brown & Samoulova. 2013. 11; see also Lee. 2014, 13-16).

7. Conclusion

Finally, the above discussion leads to a conclusion that we are living in a more connected and collaborative world for the emergence of modern social and technological trend of 21st century. Learning, in this age, can not only be limited to physical spaces in a particular environment. Nowadays, knowledge is everywhere and learning happens at local, social, didactic, technological environment along with its physical environment. As a result, educators and educational institutes of this 21st century should focus on inclusive environment in creating the successful learning environment.

There are many learning theories for creating an effective learning environment. No theory alone is fully recommendable for assessing and transforming the work environment into a learning environment for contextual differences of learning spaces and time. However, collaborative and authentic learning approaches can be useful tools for different learning strategies in the future; for assessing and transforming different workplaces into successful learning environments. Nevertheless, individual motivation for self-learning from learner perspective, inspire learning and collaborative approach by workplace leaders. Applying appropriate theories and methods that suit the environment by teachers or facilitators, can transform the various work environments into successful learning environments.

Resources


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