Perceived E-Learning Effectiveness by High-Tech Employees in Israel/

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Abstract

Industrial, financial, and technological changes have made knowledge a central resource. Knowledge is what gives the advantage upon competitors, sets in motion the development of products and the turnout. Knowledge has become a major resource and with it the employee, the carrier of knowledge. In addition, the pedagogical focus has shifted from the teacher to the student. These changes allow organizations to utilize the technology for their activities, also in the context of education, learning and coaching using e-learning systems both synchronous and asynchronous, and providing the employees with a variety of information sources(synchronous and asynchronous).

Scope

This research examines the efficacy of online asynchronous learning as perceived by Research and Development (R&D) staff using it. The study explores their attitude towards the following issues:

- Self learning.

- Extent of usage of Asynchronous sources.

- Satisfaction from asynchronous sources.

- Preference of asynchronous information sources upon synchronous learning tools (such as advance studies, courses, and lectures).

- The information of a community of practice and collaboration of knowledge as a result of using asynchronous sources.

Importance of Research

As stated above, the employee is an organization's most valued resource. He is the knowledge carrier. Therefore, the organization invests in enhancing the knowledge and in the employee's skills. Thus, the employee's attitude towards the usefulness of the learning sources at his disposal is crucial both to the organization and to the employee himself. To the organization, as it provides the technological resources as

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well as the time required for learning. To the employee, as he dedicates much of his energy to learning.

Many studies in the area of learning in an organizational framework, deal with synchronous learning, which is characterized by the learner's direct contact with a mediator/instructor. In synchronic learning, the discussion is linear and in most cases more than one trainee attend simultaneously, enabling brainstorming. In asynchronous learning, the learner deals with the material alone, without immediate response to raised questions. This study focuses on asynchronous learning sources at the disposal of R&D personnel because of the scarcity of researches dealing with this topic and because of the high availability of the employee-learner in terms of time and place compared to synchronous learning, as they are independent of an instructor and of a study group for information and knowledge transfer. Some existing studies seldom deal with R&D personnel when exploring asynchronous learning sources in the various aspects mentioned above.

Methodology

The study was conducted in an Israeli high-tech company among R&D personnel, including algorithm developers, hardware engineers and software engineers. This study utilized quantitative and qualitative research methodologies. The data was gathered via questionnaires personally distributed to and collected from the participants. Interviews were also carried out to gather background information on the organization and on the variety of available information sources. In addition, short interviews were held in order to clarify the differences in the job characteristics among R&D personnel.

Research Assumptions

The assumptions relating to the differences in roles (algorithm developers, hardware engineers, and software engineers) are as follows:

- Different roles will hold different positions towards self-learning

- Different roles will use asynchronous sources on different occasions.

- Different roles will show different preferences of an organization-external vs, an organization-internal learning environment.

- Different roles will make different assumptions as to the efficacy of asynchronous vs. synchronous learning.

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Additional assumptions:

- Managers and non-managers will show a difference in opinion on self-learning.
- A positive connection will be exhibited between one's position on self learning and one's satisfaction from using asynchronous sources.
- A positive connection will be exhibited between the amount of usage of asynchronous sources and the formation of a community of practice.
- A difference in the probability of the formation of a community of practice between different divisions.
- A positive connection will be exhibited between the amount of usage of asynchronous sources and the preference of an organization-internal learning environment.

Research Findings

This study shows that the general opinion on self learning is positive, the amount of usage of the resources by the R&D personnel who participated in this study is high, as is their satisfaction from them. In addition, the participants find asynchronous sources to be more suitable to the organization's field of activity, and that the use of asynchronous sources of information have positive consequences on their work, e.g., better time management, adoption of new work patterns, acquisition of new tools for dealing with questions and problems that may arise in the course of work. The participants view the asynchronous sources of information as a valuable tool and a central and immediate contributor to their work. Nevertheless, no definite preference of asynchronous sources of information over synchronous ones was found. Rather, the combination of synchronous and asynchronous sources are preferred, especially in consultations with colleagues, an important aspect which is lacking in asynchronous sources.

In addition, four elements central to usage of asynchronous sources for learning have been found:

1. The addition of tools for dealing with professional problems as a result of using asynchronous tools.

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2. Turning to asynchronous sources when faced with a question/problem.

3. Using the sources for learning of a new topic.

4. Better time management as a result of using asynchronous sources for learning.

Converse to the assumptions made as well as to previous studies, no differences were detected between the various roles (algorithm developers, software engineers, and hardware engineers) in the areas examined. However, this may stem from the (statistically) scarce number of hardware engineers and algorithm developers who participated in this study.

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