

## **Patterns of adopting technological innovations into teaching, and its relation to the academic culture of Israeli higher education institutions / Efrat Pieterse**

### **Abstract**

The introduction of information and communications technologies in teaching provides an opportunity for profound change in learning and instruction in institutions of higher education. Like any change, some welcome it while others see it as a burden or threat and resist it.

The institutions of higher education in Israel and other countries are adopting information technologies and educational technologies across the board, in varying quantities and ways, and faculty members are including these technologies in their teaching. This is a multi-participant process, which is influenced by numerous factors, some of them obvious and others hidden.

The purpose of this research was to identify the patterns of adopting technologies among teachers in institutions of higher education, and the impact of the organizational and academic culture of the institution on these processes, and to ascertain which models facilitate and improve the assimilation of technology, as well as the realms in which successful adoption can be predicted.

The reasons and motives for adopting technology, as perceived by the faculty members, were revealed and examined according to the organizational and academic culture of three institutions of higher education,

as indicated by semi-structured interviews with the faculty members and in-depth interviews with leaders (heads) of the institutions and the 'Change Agents' – the assimilation teams in each institution.

Rogers' (2003) model of diffusion of innovation served as a point of reference for examining the process of personal adoption and categorizing the faculty members in terms of their position on a scale of innovation, from "innovators" and "early adopters," to the "early majority" or "late majority," and, at the other end of the scale, the "laggards." In examining the process from the organizational perspective, models from the field of organizational culture and the structure of the academic institutions, as well as models and criteria for examining the adoption of technologies for teaching, were employed.

The main conclusions of the research are that the organizational culture has a crucial role in driving the process of change and dissemination of innovation for most of the faculty members, even if they are unaware of this. When the institution decides on a technological infrastructure and adopts a mandatory approach, the process of engaging in technological activities is short and the transition from innovation to routine is extremely rapid. Hence providing opportunity and defining the organization's commitment are very significant factors in conveying a message from the organization to its employees that technology is of high value and high priority. However, for an organization that aspires to innovation in teaching and deep incorporation of technologies, this is not enough. When the innovation stops and the process introduced by the institution ends at this phase, the impact of the change is superficial and the change in the conduct and teaching style of the faculty members is minimal.

In order to create patterns of continual innovation, it is essential to maintain a focus on the introduction of technology as an ongoing process. The factors found to most strongly influence deeper incorporation of technologies and their use in teaching were regular supervision and monitoring by the managers or agents of change, and a reward to faculty members that they perceive as valuable. Among the factors that determine the employee's status in the organization, the obvious and hidden value ascribed to the quality of teaching was found to affect the perceived value of the reward.

The findings also indicate that the organizational culture does not affect those defined as innovators and has relatively little impact on those defined as laggards, in Rogers' terms, and its main impact is on the late majority and the early majority. Accordingly, the effort that organizations invest in innovators creates "islands of innovation" but does not necessarily spearhead a process of "general innovation," and therefore, it does not produce the desired results.

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