Access to Development Opportunities in Biomedical and Health Informatics

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Abstract. In between users and trained informaticians, we find a group of people carrying out important work in implementing and further developing health information technology, without access to formal biomedical and health informatics (BMHI) training. Study findings show what is required of novices in BMHI to gain access to communities of practice through which expertise can be developed.

Keywords. competencies, healthcare workforce, communities of practice

1. Introduction

With the increase of healthcare and information technologies (HIT) in public healthcare follows a widely recognized need for correspondingly training the healthcare workforce to be capable of adopting and adapting new technologies [1]. As they are not, nor should be, informaticians, they do not have access to formal BMHI training, leaving them to seek out the necessary skills and expertise in their professional network. We suggest a theoretical framework of communities of practice [2, 3], where novices develop skills through participating in actual 'situated' work practices with experts. This study explores how novices in BMHI gain access to such communities of practice.

2. Methods

The study was conducted in the secondary public healthcare sector in a Scandinavian country, focusing on employees and managers' participation in department-local HIT projects. Data originates from participant observations (throughout 2020-2022) of project meetings, collaborative meetings, and everyday work as well as semi-structured

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interviews (n=29) with project participants (healthcare workers), managers, and informaticians. Data from participant observations and interviews was coded according to thematic analysis [4].

3. Results

Findings highlight three aspects of gaining access in the planning and implementing of HIT: 1) knowing when expert help was needed, 2) knowing which kind of expertise was needed, and 3) insisting on continued expert relations. It was complicated for the novices to plan and implement HIT. They would often encounter various obstacles spanning from technical problems to finding time and resources. The novices had to negotiate whether they could overcome obstacles themselves or if they had to reach out to experts. They had to show great patience when figuring out how to gain access to experts, who were able and willing to help them. Although this took time, they gained important understanding of BMHI as well as of implementing HIT in their own, complex organization. Even more experienced novices, who knew when and whose expertise was needed, had to insist on continued relations to shifting experts in complex, ever-changing communities of practice. These three aspects of gaining access were required to implement HIT. At the same time, through this process of gaining access, the novices widened their knowledge of and situated training in BMHI.

4. Discussion and Conclusion

It is no secret that planning and implementing HIT requires access to the right experts. However, our findings show that this is not as easy as it may sound, and furthermore, it is highly context sensitive. Knowing *when* to ask for help, *where* to find it, and *keeping* this access to expertise available is central to becoming part of a community of practice through which expertise in HIT and BMHI is developed.

Because the needs are diverse, depending on the specific project, and the HIT landscape is everchanging, approaching competency development in the wider healthcare workforce through life-long, situated learning could be advantageous [1]. We call for a strengthened focus on gaining legitimate access to participate in projects with relevant experts [3] as it is through the everyday work with digitalization projects and experts in various areas that the healthcare workforce can develop expertise in BMHI.

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