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A systematic review of Faculty Development and digital technologies in Higher Education

Federica Emanuel¹[^{0000-0002-7922-719X}], Laura Fedeli²[⁰⁰⁰⁰⁻⁰⁰⁰²⁻¹⁵⁰⁹⁻⁰³²³], Alessia Scarinci³
[⁰⁰⁰⁰⁻⁰⁰⁰²⁻³¹⁷⁴⁻⁷¹³⁷]

¹ eCampus University (Italy); ² University of Macerata (Italy); ³ Mercatorum University (Italy)

federica.emanuel@unicampus.it; laura.fedeli@unimc.it;
alessia.scarinci@unimercuratorum.it

1 Introduction

Two years ago, the SIPED working group “Faculty Development and University Teaching¹” initiated a systematic review to delve deeper into the central aspects of the Faculty Development research field. As part of the SIPED initiative, the sub-working group 6 focused on the intersection of Faculty Development (FD) and Instructional Technologies. This focus aimed to explore the dynamic relationship between these two domains, seeking to understand how instructional technologies can shape and be shaped by Faculty Development initiatives within the context of Higher Education.

In the field of educational technology research, Belt and Lowenthal’s literature review [1], covering scholarly articles from 2013 to 2018, emphasized the pivotal role of integrating digital technologies into teaching and learning processes. This integration emerges as a core concern for Faculty Development (FD) initiatives, underlining the need for educators to adapt to the evolving digital landscape and effectively leverage technology to enhance pedagogical practices. The COVID-19 pandemic has accelerated the integration of digital technologies in Higher Education, underscoring the importance of continuous Faculty Development to adapt to this change [2][3][4].

This initiative aimed to investigate the profound impact of technologies on teaching methods, learning processes, and evaluation systems in Higher Education. By doing so, the group sought to provide valuable insights into the evolving landscape of Faculty Development and its intersection with digital advancements [5]. This paper builds upon findings presented last year by a subgroup of researchers who explored the multifaceted role of technologies in Faculty Development [6]. Specifically, this systematic literature review examines the intersection of professional development and digital technologies within the context of Higher Education. By analyzing existing research, the review aims to identify effective training strategies, uncover challenges faced by institutions and educators, and highlight emerging opportunities for leveraging digital tools to enhance Faculty Development initiatives.

¹ Società Italiana di Pedagogia (SIPED), *Faculty Development and University Teaching work group*, <<https://www.siped.it/gruppi-di-lavoro/faculty-development-e-didattica-universitaria/>>.

2 Review overview

According to the Prisma framework [7], the methodology employed in this phase of the research mirrored that used in the initial analysis of systematic reviews. This ensures a rigorous and transparent approach, facilitating the reproducibility and reliability of the findings [8].

The search strategy was developed using the same strings adopted in previous work [8]. The searching process through Google Scholar did not permit researchers to set the time frame within the string, so we had to refine the results manually.

Additional inclusion criteria concerned the type of publications, specifically selecting only open access documents (journal articles, book chapters) and excluding conference proceedings and books.

The final data (as of July 1, 2024) included: 112 records from Scholar, 54 from Scopus and 692 from Web of Science. For the initial coding process, we used the three categories delineated by Bergquist & Phillips [9] (attitudes, processes and structures) in their conceptualization of FD and instructional technologies. Authors define “attitudes” as the actions or programs targeting the attitudes of academic personnel, “processes” as changes in organization directly connected to FD, and “structures” as the organization asset supporting FD (i.e. organization or IT assets).

The purpose of abstract screening was to further exclude papers/outputs not relevant to the study’s objective and to proceed with an initial coding process for the remaining research items. The screening results, organized by databases and categories, are shown in Table 1.

Table 1. Results

| | Scholar (n = 112) | Scopus (n = 54) | Web of Sciences (n = 692) |
|----------------------------------|----------------------|--------------------|------------------------------|
| Discarded | 112 | 40 | 671 |
| <i>Full text analysis needed</i> | | | |
| Attitudes | 0 | 2* | 7* |
| Processes | 0 | 10* | 6* |
| Structures | 0 | 2* | 8* |
| Articles | 0 | 14 | 21 |

In conclusion, the initial screening yielded the following results: 9 articles fell into the category of attitudes, 16 into processes, and 10 into structures. A total of 858 items were discarded. Some items (marked with an asterisk) appeared in multiple databases. The final number of articles selected for analysis is 31. The full papers analysis will involve all group members, who will triangulate their coding processes and propose sub-categorizations to organize the presentation of the results.

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