



# Evaluation of UDReady: a Tool for Measuring Digital Readiness in Higher Education

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## Abstract

This paper introduces *UDReady* (University Digitally Ready), an innovative tool designed to help universities assess their Digital Readiness, a critical step for identifying challenges and devising effective digital transformation strategies. Developed under the *DigiReady+* project, *UDReady* applies a data-driven framework to support higher education institutions in evaluating their readiness levels. The paper also outlines the various approaches used to define the *DigiReady+* indicators to measure digital readiness and details the mixed-methods evaluation of the *UDReady* tool. This evaluation involved three focus groups with key stakeholders from universities in Germany, Spain, and Greece, a heuristic review, and usability testing via the standard System Usability Scale questionnaire.

## 1 Introduction

Higher Education Institutions (HEIs) must evaluate their digital readiness to effectively navigate the evolving digital landscape, address emerging challenges, and implement strategic transformation initiatives. The *DigiReady+* project (Tsimpanis et al., 2024), that recently has been completed, aimed to establish a multidimensional framework and develop a web-based tool that integrates with the

Learning Management Systems (LMSs) and institutional databases to assess an institution's Digital Readiness. Digital Readiness (DR) is frequently linked to closely related concepts, including Digital Transformation (DT) and Digital Maturity (DM). However, they differ in focus, DR emphasizes on the institution's preparedness to adopt digital technologies, DT concerns the active process of implementing these technologies to drive changes and DM assesses the extent to which such technologies have been effectively integrated and utilized (Chounta et al., 2024).

The DigiReady+ (DR+) Framework evaluates digital readiness across seven dimensions: (D1) *Digital Leadership and Governance*, (D2) *Digital Strategy and Policies*, (D3) *Teaching and Learning*, (D4) *Content and Curricula*, (D5) *Training and Support*, (D6) *Infrastructure*, and (D7) *Networks and Collaboration*. These dimensions are further broken down into topics and indicators, as they emerged from participatory workshops with key stakeholders (Chounta et al., 2024). Throughout its development, the framework has undergone several iterations. The **third version** comprised 26 topics, and 82 indicators, but lacked structured calculation methods for both qualitative and quantitative indicators. This paper presents the process of finalizing the current, **fourth**, version of the framework, which integrates the defined formulas and data points for use within the *UDReady* platform.

To operationalize the DR+ framework, the *UDReady* tool was developed, a web platform that allows HEIs to assess their digital readiness by providing relevant data. Institutional analytics, when developed, can be the main source of these data, as Brooks and Thayer (2016) discuss in their report on maturity of such data sources in HEIs. The *UDReady* platform supports assessment campaigns for administrators and enables HEIs to track and analyze their institution's digital transformation (Tsimpanis et al. 2024). With a mature framework and a fully functional platform, we conducted a mixed methods evaluation study to assess:

- **User Engagement and Usability:** Gathering feedback from hands-on user testing across four structured events to assess effectiveness, ease of use, and adoption potential.
- **Heuristic Evaluation:** Applying usability principles to identify strengths and areas for improvement in the platform's interface and functionality.

This study, as presented in section 4, attempts to formally evaluate the *UDReady* Platform as a tool for HEIs institutional self-assessment. While our findings provide insights into their effectiveness, further longitudinal validation and broader institutional testing are needed before we move to a wider applicability.

## 2 Towards the DigiReady+ Framework version 4.0

In this section, we review the methodology and key findings that guided the refinement of the DR+ framework through an iterative, participatory development process, involving key stakeholders and continuous validation.

The previous iteration of the process led to the 3rd version of the framework, which consisted of 7 dimensions, 26 topics, and 82 indicators. However, a major challenge was to assess whether stakeholders can access the necessary information, e.g. documents needed to provide the required evidence to measure certain indicators, especially when unstructured institutional information can be found only in PDF documents and web pages that are not all readily available to the stakeholders responsible for assessing Digital Readiness. To address this, we conducted case studies at **three European universities**, the University of Patras (UPAT), University of Duisburg-Essen (UDE) and University of Valladolid (UVA) using a Large Language Model (LLM)-based search engine to assess the availability of data focusing on these indicators. Key findings from this case study, presented by Manouskos et al. (2024), show that while some qualitative indicators could be evaluated using

publicly available information, others were partially accurate or unmeasurable due to a lack of relevant data. As a result, it was concluded that a hybrid intelligence (Dellermann et al., 2019) approach combining human input with AI tools would be more effective for measuring these indicators.

To define the measurement methodologies for all indicators, qualitative and quantitative, each indicator was assessed for measurability based on datasets, data sources, and publicly available documents collected from the three institutions. The evaluation determined whether the indicators could be measured using this data and helped define the appropriate measurement methodologies for each indicator. The evaluation of measurability across all framework's dimensions showed that while many indicators were measurable using institutional data, others lacked a clear methodology for assessment. That was the case for 18% of the 3<sup>rd</sup> version of the DR+ framework. For example, in Dimension *D3 Teaching and Learning*, an indicator related to student performance was challenging due to difficulties in correlating the LMS platforms' usage with academic outcomes. Similarly, several indicators in Dimensions *D4 Content and Curricula* and *D5 Training and Support* were deemed unmeasurable due to abstract definitions of data sources, or insufficient data.

As a result, 67 indicators were deemed measurable and for these specific measuring methodologies were defined. For example, an indicator from D3 is measured by calculating *the percentage of courses that are active in the Institute's LMSs or digital learning platforms*. For certain indicators, we established an 'upper boundary' methodology, which requires the input of a theoretical best-case scenario to be used as a benchmark so to compare and assess the performance or outcomes of these indicators. This methodology aims to contextualize and normalize measurements across different institutions for more accurate assessment. The use of an ideal or best-case scenario, but in a much different way, has been proposed and implemented in questionnaires that assess digital transformation in HEIs (Brooks and McCormack, 2020; von der Heyde, 2023).

For testing the measurability of the indicators, we used data from various actual sources across our institutions to ensure a comprehensive evaluation of all dimensions:

- *Digital Leadership and Government* (D1) relied on public information and internal units
- *Digital Strategy and Policies* (D2) used documents about strategy along with internal data
- *Teaching and Learning* (D3) requires accessing LMS analytics, a practice that unveiled several challenges
- *Content and Curricula* (D4) requires data from the LMS and the Quality Assurance Unit, however some indicators were deemed as practically unmeasurable.
- *Training and Support* (D5) requires data from a Centre that supports continuous education and training of institutional members (faculty, students, staff) as well as LMS analytics, while some indicators were deemed unmeasurable.
- *Infrastructure* (D6) was found to be fully measurable using digital systems, monitoring tools, and data analytics.
- *Networks and Collaboration* (D7) can be assessed using data provided by the Quality Assurance Unit, along with publicly available information from academic publication databases and institutional rankings, such as Scopus and the CWTS Leiden Ranking<sup>†</sup>, respectively.

Following the evaluations, we refined the framework, removing non-measurable indicators and developing clear calculation methodologies for each remaining indicator. These methodologies

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<sup>†</sup> <https://www.leidenranking.com/>

integrate both quantitative and qualitative variables, with scores ranging from 0 (poor performance) to 1 (excellent performance). The revised version of the framework, DR+ version 4.0 includes updated measuring methods for each indicator, with each consisting of components called *Data Points*, classified as either quantitative or qualitative. Quantitative data points require numerical values and provide objective measures, while qualitative data points refer to binary (yes/no), 3-level, or 5-level Likert scale (with justifications), all of which contribute to indicator scores that range from 0 to 1. For those indicators that the 0 to 1 range of values was not possible, the Upper Boundary Measuring Methodology is adopted to compare scores with an optimum or best-case scenario. Furthermore, it was necessary to address the "missing information problem," discussed previously in Tsimpanis et al., (2024). For this, we adjusted the scoring algorithm to handle the non-measurable or irrelevant indicators for an institution by either excluding them or averaging scores of the remaining indicators, within a topic, when necessary. This ensures that institutions can adapt the framework to meet their needs and still track their progress based on their institutional goals.

### 3 The UDReady Platform Implementation Process

In this section, we present the capabilities and modules of the current version of the UDReady platform. While the platform's modules were introduced by Tsimpanis et al. (2024), we will focus on describing the user experience and how the platform is utilized from the perspective of its users.

The UDReady platform is a web-based tool designed for institutions that wish to assess their digital readiness for a specific campaign period. A "campaign" refers to the assessment of an institution's digital readiness during a specific period, and it is defined by the institution's administrators. The primary goal of the HEI managers is to successfully complete the corresponding campaign and produce a Report about the institution's digital readiness.

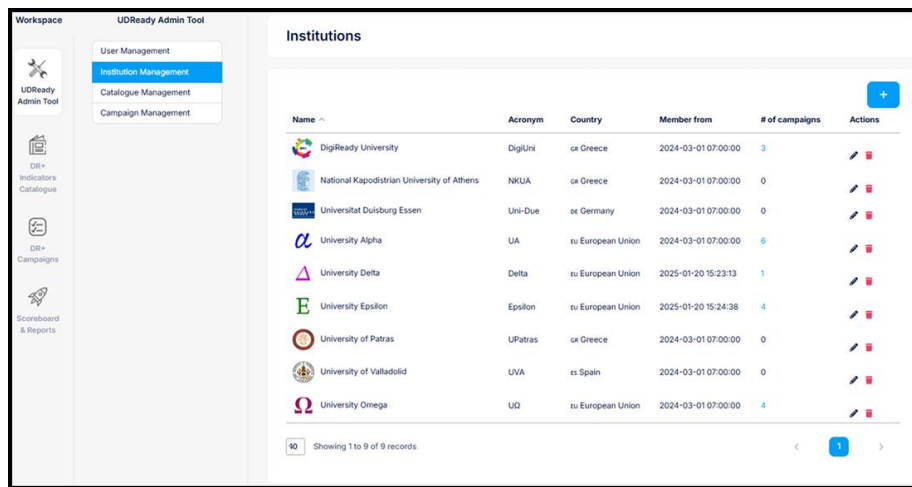
During an active campaign, the institutional stakeholders must review the DR+ framework tailored for their institution, identify and map relevant data sources, such as institutional data, public documents, and data from tools like the LLM-search engines, as well as open public data. For quantitative indicators, they should provide values for the corresponding data points following the tool's instructions. For qualitative indicators, they should access and review the necessary documents to accurately answer the corresponding Likert scale statements and provide the necessary evidence.

Once a campaign is complete, the institution leaders and decision-makers can access the platform to review the scores and scoreboard. This enables them to identify areas of weakness, prioritize necessary improvements, and decisions on actions to take. Based on the scores across the different dimensions, the platform is designed to provide recommendations about resources that address gaps and misalignments. These recommendations aim to provide a comprehensive digital transformation strategy, ensuring the institution can enhance its digital capabilities. The insights gained also guide ongoing efforts to adapt and align with emerging digital trends and institutional objectives.

The UDReady platform consists of several key modules, three of which are accessible to all users. The *DigiReady+ Indicators Catalogue* contains the DigiReady+ framework, including its seven dimensions, their topics, weights for calculating the dimension scores, indicators, formulas, and data points. *DigiReady+ Campaigns* is a module that manages both active and inactive campaigns within an institution, allowing managers to report data either through self-reporting or by retrieving data from institutional information systems via an API. The *DigiReady+ Scoreboard & Reports* module presents the results of the assessment process, along with relevant recommendations for the users. Finally, the *DigiReady+ Admin* module is restricted to top-level system administrators, who can manage users (e.g. registrations and role definitions), oversee the HEIs actions, and administer the *DigiReady+* framework with the campaigns that HEIs need to complete.

### 3.1 HEI Administrator

In the platform, the *Administrator* is responsible for managing users, frameworks, and campaigns across multiple institutions. While the administrators have access to all four modules, their primary focus is on using the *UDReady Admin Tool* to oversee various institutions. Key tasks (Figure 1) include creating user accounts, assigning roles, and setting up credentials for HEI managers. Administrators also modify and update framework versions, including editing dimensions, topics, indicators, calculating formulas and data point. Additionally, they ensure that institutions complete their campaigns and are responsible for creating new campaigns for specific periods.



| Name                                       | Acronym | Country           | Member from         | # of campaigns | Actions         |
|--|---------|-------------------|---------------------|----------------|-----------------|
| DigiReady University                       | DigiUni | ca Greece         | 2024-03-01 07:00:00 | 3              | [edit] [delete] |
| National Kapodistrian University of Athens | NKUA    | ca Greece         | 2024-03-01 07:00:00 | 0              | [edit] [delete] |
| Universität Duisburg Essen                 | Uni-Due | de Germany        | 2024-03-01 07:00:00 | 0              | [edit] [delete] |
| University Alpha                           | UA      | eu European Union | 2024-03-01 07:00:00 | 6              | [edit] [delete] |
| University Delta                           | Delta   | eu European Union | 2025-01-20 15:23:13 | 1              | [edit] [delete] |
| University Epsilon                         | Epsilon | eu European Union | 2025-01-20 15:24:38 | 4              | [edit] [delete] |
| University of Patras                       | UPatras | ca Greece         | 2024-03-01 07:00:00 | 0              | [edit] [delete] |
| University of Valladolid                   | UVA     | es Spain          | 2024-03-01 07:00:00 | 0              | [edit] [delete] |
| University Omega                           | UQ      | eu European Union | 2024-03-01 07:00:00 | 4              | [edit] [delete] |

Figure 1 DR+ Admin Tool

### 3.2 HEI Manager – Completing Campaign & Scoreboard

A user with the role of *HEI Manager* has access to the "*DR+ Indicators Catalogue*", "*DR+ Campaign*", and "*Scoreboard and Reports*" modules. However, those responsible for completing a campaign will primarily use the first two. At the start of a campaign, such a user will first access the *DR+ Campaign* module to identify the version of the DigiReady framework used for assessing their institution's digital readiness. Next, they will have to review the *DR+ Indicators Catalogue*, to understand dimensions, topics, indicators, and data points. The next step is to map the institution's data and collect qualitative and quantitative data. Once data collection is complete, the assessment may begin, through the *DR+ Campaign* module (Figure 2a). For each indicator, the appropriate score level should be selected along with a justification if this indicator refers to qualitative data points (Figure 2c). For quantitative data points, the input could be either a self-reported numerical value (Figure 2b) or data from the institutional information systems via the established retrieval setup (Figure 2d). If an indicator is irrelevant to the institution, then it can be declared as such in the campaign module and the specific indicator will not contribute to the final score, as was stated in Section 2.

After a campaign is completed, the platform shows 100% progress for all dimensions, activating the scoreboard and campaign recommendations. Decision-makers can log into the platform to review the institution's score from previous campaigns, as well as for the most recently completed campaign. They can view the overall score (Figure 3a), which breaks down the score by dimension. Additionally, they can examine the score for each indicator within a dimension (Figure 3b) to pinpoint

specific areas of weakness. Lastly, the platform provides recommended resources from the knowledge repository. Users can extract and share the scoreboard, including scores per dimension and indicator, with other members of their institution (Figure 3b).

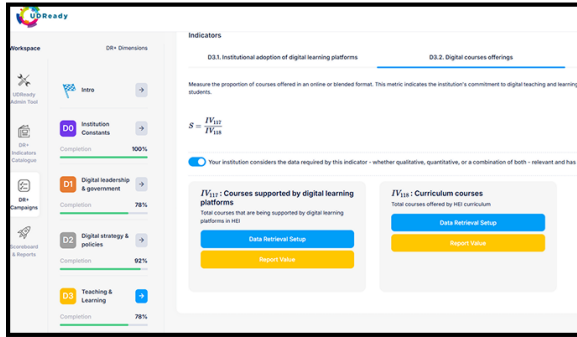


Figure 2a DR+ Campaigns Module

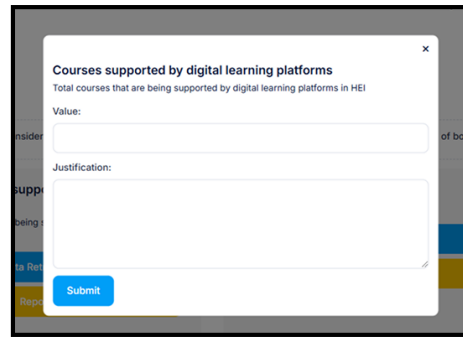


Figure 2b Self-report Data point

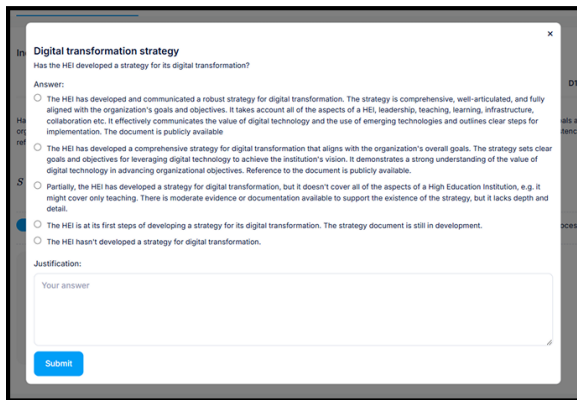


Figure 2c Qualitative Data point

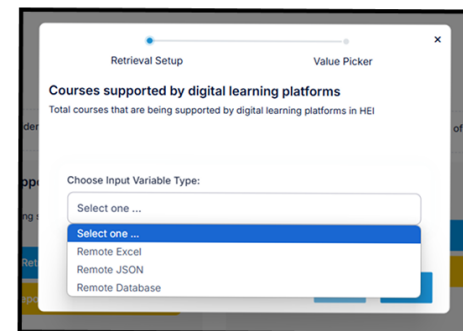


Figure 2d Retrieval Setup

Figure 2 DR+ Campaigns - Data Points Reporting Methods

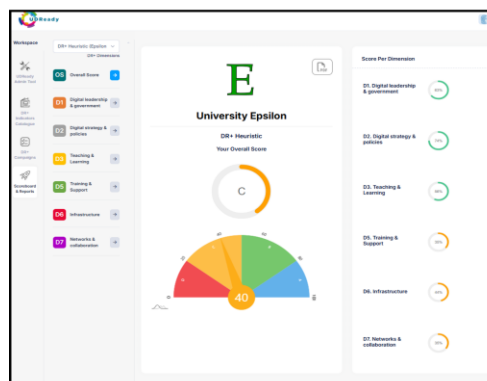


Figure 3a Overall Scoreboard

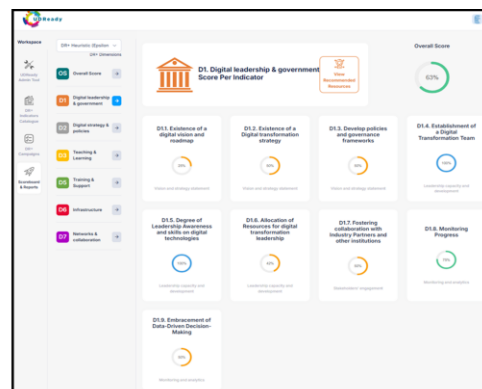


Figure 3b Score per indicator

Figure 3 DR+ Scoreboard & Reports Module

## 4 User and Expert Evaluation of UDReady

In this section, we outline the evaluation of the *UDReady* platform, conducted through focus groups with key stakeholders from institutions in Spain, Germany, and Greece, followed by an expert-based assessment of the platform that aimed to identify usability issues.

### 4.1 User-based Evaluation of UDReady

The evaluation of the UDReady platform that implemented the revised *DR+ Framework (v4.0)* (as discussed in section 2) was conducted through a series of focus groups comprising key stakeholders from 19 European institutions. The focus groups aimed to assess the importance, usability and effectiveness of platforms in facilitating digital readiness evaluation. The workshops were held in Spain, Germany, and Greece. These sessions provided the opportunity for the participants to engage with the platform and offer feedback, based on actual experience. The user-based evaluation approach was employed to gather qualitative and quantitative data on the platform's usability and overall functionality. The data reported included recorded observations, comments during discussions, and responses to a System Usability Scale (SUS) questionnaire administered across all focus groups. In total 59 key stakeholders, affiliated with 19 European institutions, participated in the user-based evaluation. The participants were mainly decision-makers, vice-rectors, IT governors, faculty members, researchers, and IT professionals. In all three focus groups, the evaluation followed the same procedure. Participants were divided into groups. Each group was given a datasheet for a hypothetical institution and a set of five indicators from different dimensions and were asked to use the *UDReady* platform to measure the given indicators. After completing the activities, and participation in a focus group discussion, we coded the main findings as reported next.

Regarding the *usability and navigation of the platform*, participants generally found the platform straightforward and easy to use. Navigation within the platform was assessed positively, with smooth transitions between sections and reports. However, users reported challenges in navigating between thematic sections to identify indicators that had not been measured, thus suggesting improved UI feedback to display the progress per topic (e.g., “2/3 indicators completed”). While the data retrieval methods were found to be effective, navigating away from the data entry interface to regenerate reports from the scoreboard was considered inconvenient, prompting a recommendation for a more seamless reporting experience. Regarding the *Data entry and indicator formulas*, the participants perceived the data entry as simple and intuitive but noted that if they had to implement the procedure for their own institution, the data collection and preparation would pose a challenge. In addition, they provided suggestions to alter the data points for a few of the indicators. Regarding the *Scoreboard and automated report*, participants found them useful and indicated areas for improvement. They frequently compared reports based on different versions of data points and suggested adding a direct link to specific indicator values within the visualization page for improved accessibility. However, they also highlighted the need to exit the *DR+ Campaign* module to regenerate reports, which was seen as a usability issue. A key recommendation was to automate report generation using AI tools to improve efficiency. Additionally, stakeholders emphasized the need for customizable indicator weights per university. Concerns were raised about cases where an overall positive indicator contained weak data points, suggesting the need for a more nuanced approach to interpretation. In relation to *Recommendations* retrieved from the Knowledge Repository (KR), concerns emerged regarding the usefulness of some recommended resources. Participants questioned the criteria for selecting resources and suggested ensuring greater transparency in their allocation. There was also a need to integrate university-specific resources into the KR. Sustainable maintenance of the KR was highlighted as a key requirement, alongside addressing the subjectivity in some data point assessments.

In general, productive discussions arose regarding institutional digital transformation efforts, with participants comparing their universities' practices. Spanish participants assessed the accuracy of both Spanish and English interfaces, confirming consistency across languages. Similarly, participants in the German focus group confirmed consistency across English and German language and provided minor suggestions for improvement. Greek stakeholders emphasized the need for such tools to track and manage digital transformation progress within their quality assurance processes. The integration of course Information Systems (IS) with Virtual Learning Environments (VLE) was a recurring discussion topic, reinforcing the need for better integration mechanisms with the platform.

An additional method to evaluate usability of the UDReady platform by typical users, was the widely used System Usability Scale (Brook, 1986). This contains 10 statements on the experience of interaction, through which the participants provided their agreement with the statement on a five-point scale, following adjustment for polarity of the question and multiplying the total score by factor that ranges from 0 to 100. The SUS questionnaire was distributed to participants after the activities concluded, with a total of 40 participants completing them. The final SUS score was 80.55, exceeding the average benchmark of 68 (Bangor, et al. 2008), which reflects a high level of user satisfaction with the platform's usability and effectiveness. These results confirm that the UDReady platform and DR+ Framework offer a positive user experience to typical stakeholders and users, while also identifying areas for future improvements to further enhance usability.

## 4.2 Heuristic Evaluation of UDReady Platform

A heuristic evaluation based on the usability heuristics proposed by (Nielsen & Molich, 1990) was conducted to assess the UDReady platform's usability, focusing on two key user roles: *Administrator Users*, responsible for managing campaigns, user roles, and framework versions, and *HEI Manager Users*, who input data, track digital readiness, and review reports. The evaluation identified 34 usability issues, spanning over different platform modules, and categorized by severity. Specifically, several issues related to user feedback and error handling were identified, affecting both accessibility and overall ease of use. For example, the *Login Page* lacked clear error messaging when incorrect credentials were entered, and the "forgot password" function was non-functional, making the account recovery difficult. The DR+ Admin Tool (Figure 1) had weak system feedback, with non-functional delete buttons and an unclear framework catalogue structure, making it challenging for administrators to configure platform settings effectively. Similarly, the DR+ Campaigns module presented a critical issue in data retrieval, as users could not determine the supported database types for quantitative entry, limiting their ability to input and analyse data efficiently.

Regarding the navigation and information architecture, the platform presented inconsistencies that affected usability. The Dashboard lacked short descriptions for modules, making it unclear what each section was for, and the profile icon was not intuitively linked to user account settings. In the DR+ Catalogue, the arrangement of dimensions and excessive whitespace reduced efficiency, as users struggled to locate relevant information quickly. Additionally, the *DR+ Scoreboard* displayed an inconsistent hierarchy of indicators, where some sections followed a Dimension → Indicator → Topic structure, while others used Dimension → Topic → Indicator. This lack of consistency caused confusion and disrupted the workflow efficiency.

Regarding the data entry and progress tracking, the evaluators noted that while data entry was generally intuitive, tracking progress within campaigns was problematic. The *DR+ Campaigns* module displayed completion at the dimension level but did not provide granular insights at the topic level, making it difficult to identify unmeasured indicators. Furthermore, certain sections of the *DR+ Admin Tool* lacked flexibility in configuration, particularly in managing indicator weights, which proved to be complex and unintuitive for users.

Finally, regarding the overall assessment and recommendations, while evaluators praised the platform's clean design and user-friendly interface, they found the admin interface overly complex,



particularly when configuring dimensions, topics, indicators, and weights. To improve usability, the evaluation recommends enhancing error handling with clear and localized feedback messages, so to improve navigation through better UI labels and content restructuring, refine progress tracking mechanisms for greater transparency, and simplify configuration tools by integrating tooltips or contextual help. Addressing these concerns will streamline user interactions, enhance efficiency, and provide a more seamless experience for both administrators and managers.

## 5 Conclusions and Future Work

The findings from the user-based and expert-based evaluations have contributed significantly to the improvement of the DigiReady+ framework, the UDReady platform, and the Knowledge Repository. These studies emphasized the framework's role in enabling higher education institutions (HEIs) to self-reflect and track their digital transformation progress, rather than serving as a comparative ranking tool. By incorporating structured evaluation methodologies, as discussed here, the framework has been refined from 82 to 67 indicators, ensuring a more streamlined and tested approach to measuring both qualitative and quantitative aspects of digital readiness. The definition of formulas and data points was further strengthened to support seamless integration into the *UDReady* platform.

Particularly for the qualitative indicators, case studies at three European universities revealed that some indicators could be assessed using publicly available information. Additionally, the integration of a Large Language Model search engine demonstrated the potential in assisting stakeholders with qualitative assessment, as a human-validated support tool. This approach highlights the importance of hybrid assessment models, where AI can enhance decision-making while preserving expert oversight.

The UDReady platform's adaptability emerged as a key strength, reinforcing its self-reflection purpose. The ability for HEI administrators to customize the framework to institutional needs, as well as for HEI managers to ignore non-relevant indicators, ensures flexibility and relevance across diverse contexts. Participatory evaluations conducted in focus groups in Greece, Spain, and Germany confirmed that stakeholders found the platform user-friendly, intuitive, and effective for digital transformation tracking. Notably, participants in Greece emphasized that a platform like UDReady should be implemented across all Greek institutions to support the ongoing digital strategy efforts. However, feedback also highlighted the need to refine some indicator formulas and enhance indicator definitions for improved accuracy.

The System Usability Scale (SUS) evaluation, conducted across three groups of users, yielded an overall average score of 80.55, exceeding the benchmark of 68 and indicating high usability and efficiency. While participants appreciated the platform's structured data retrieval and ease of use, a key challenge identified was the preparation and calculation of data before inputting it into the platform. This suggests a need for further guidance and support tools to facilitate data entry and ensure accurate assessments.

The iterative development of the framework, coupled with the ongoing validation efforts, ensures its continued relevance and adaptability across diverse institutional and regional contexts. Regarding future research directions, these include:

- **Broader Framework Validation:** Expanding evaluation efforts across a wider range of European institutions to test the applicability and accuracy of the proposed indicators and formulas.
- **AI-Driven Enhancements:** Exploring automation through AI tools to improve the processing of both qualitative and quantitative data, as well as enhancing reporting capabilities.

- Improved Data Management Support: Developing tools and guidelines to help institutions prepare and manage data inputs, addressing the most frequently reported challenge.

As digital transformation continues to reshape HEIs, initiatives like the DigiReady+ framework and UDReady platform will play an essential role in supporting institutional strategic planning and decision-making, and the ongoing refinement of the framework and platform will ensure they remain effective, scalable, and aligned with the evolving digital landscape.

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## 6 References

- Bangor, A., Kortum, P., & Miller, J. (2008). An Empirical Evaluation of the System Usability Scale. *International Journal of Human-Computer Interaction*, 24(6), 574–594. <https://doi.org/10.1080/10447310802205776>
- Brooke, J. (1986). SUS—A Quick and Dirty Usability Scale. *Usability Evaluation in Industry*, 189–194.
- Brooks, D. C., & McCormack, M. (2020). *Driving Digital Transformation in Higher Education Research Report*, Louisville, CO, ECAR.
- Brooks, D. C., and Thayer. T-L.B., (2016). *Institutional Analytics in Higher Education*. Research report. Louisville, CO, ECAR.
- Chounta, I.-A., Ortega-Arranz, A., Daskalaki, S., Dimitriadis, Y., & Avouris, N. (2024). Toward a data-informed framework for the assessment of digital readiness of higher education institutions. *International Journal of Educational Technology in Higher Education*, 21(1), 59. <https://doi.org/10.1186/s41239-024-00491-0>
- Dellermann, D., Ebel, P., Söllner, M., & Leimeister, J. M. (2019). Hybrid Intelligence. *Business & Information Systems Engineering*, 61(5), 637–643. <https://doi.org/10.1007/s12599-019-00595-2>
- Manouskos, Z., Avouris, N., Daskalaki, S., Chounta, I.-A., Dimitriadis, Y., & Mohamed, S. (2024). Using Large Language Models to assess Digital Readiness of a Higher Education Institution. Presented in EUNIS Congress 2024. <https://doi.org/10.5281/zenodo.15052609>
- Nielsen, J., & Molich, R. (1990). Heuristic evaluation of user interfaces. *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*, 249–256. <https://doi.org/10.1145/97243.97281>
- Tsimpanis, K., Avouris, N., Chounta, I.-A., Daskalaki, S., Dimitriadis, Y., Gari, C. M., Kalouptsoglou, A., Ortega-Arranz, A., & Balaouras, P. (2024). Implementing a data-driven framework for measuring digital readiness across European universities. 129–117. <https://doi.org/10.29007/ds3v>
- Markus von der Heyde (2023). A Standardised Digital Maturity Index and the Application to Higher Education. In *Proceedings of European University Information Systems Congress 2023* (pp. 17-26). EasyChair. <https://doi.org/10.29007/kc1n>