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**UTTARAKHAND OPEN UNIVERSITY,
HALDWANI, NAINITAL**

The report should be sent (in the sealed envelope) to the Director Research, Uttarakhand Open University, Teenpani Bypass Road, Haldwani (Nainital) - 263 139.

PROFORM FOR THE WRITING Ph.D. VIVA REPORT

- 1- Name of the Candidate **Balam Singh Dafauti**
- 2- Subject **Computer Science & IT**
- 3- Name of the Doctorate Degree **Ph.D. in Computer Science**
- 4- Title of thesis **Optimization of Learning Management System to Improve User Experience & Learner Retention: A case study of Uttarakhand Open University**
- 1- Name of the examiner with full postal address
Prof. Ashutosh Gupta, Director, School of Sciences, U.P. Rajarshi Tandon Open Univesity, Prayagraj

Note – Under the ordinance relating to Doctorate Degree a thesis shall comply with the following conditions and the examiners are requested that in case they approve of a thesis for the degree, is should be definitely mentioned in the report that the thesis complies with these requirements.

- (a) It must be a piece of research work characterized either by the discovery of facts or by a fresh approach towards the interpretation of facts or theories. In either case it should evince the candidate's capacity for critical examination and sound judgment.
- (b) It shall be satisfactory in point of language and presentation of subject matter. The examiners will also indicate whether the thesis is suitable for publication in its present form with or without amendments.

IMPORTANT

The Examiner is requested to recommend definitely weather.

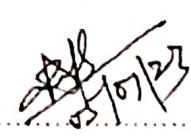
- (a) The candidate be admitted to the degree.
Or
- (b) The candidate should improve and resubmit the thesis.
Or
- (c) The thesis should be rejected.

REPORT

Detailed report is attached (Pages 1 and 2)

The candidate be admitted to the degree.

Dated 05.07.2023


(Signature of the Examiner)

(If necessary blank sheets may be added to complete the report)

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CONFIDENTIAL

PhD Thesis Evaluation Report

Title: "Optimization of Learning Management System to Improve User Experience & Learner Retention: A case study of Uttarakhand Open University"

Summary: The Ph.D. thesis titled "Optimization of Learning Management System to Improve User Experience & Learner Retention: A case study of Uttarakhand Open University" focuses on examining the user experience of online courses hosted on the Uttarakhand Open University's (UOU) Learning Management System (LMS). The thesis aims to compare the user experience of UOU's LMS with other platforms, identify factors influencing users' experience on the LMS platform, determine the necessary modules for optimizing the LMS to enhance user experience, and investigate the impact of improved user experience on learner retention rates.

Evaluation: After carefully reviewing the contents and findings of the Ph.D. thesis, it is recommended to award the thesis with no changes in the manuscript. The thesis successfully addresses the stated objectives and contributes valuable insights to the field of learning management systems, user experience, and learner retention.

The thesis begins by setting clear objectives, which are effectively pursued throughout the study. The author's approach of comparing UOU's LMS with other platforms provides a comprehensive understanding of the current user experience landscape. The identification of factors influencing users' experience on the LMS platform is a crucial step towards optimizing the system.

The thesis demonstrates a meticulous examination of the various modules required for optimizing UOU's LMS to enhance user experience. By addressing these modules, the author contributes to the improvement of the overall learning experience within the university. Furthermore, the study's focus on the impact of improved user experience on learner retention rates showcases the significance of optimizing LMS platforms for the benefit of learners and educational institutions.

The research methodology employed in the thesis is commendable. The case study approach involving Uttarakhand Open University provides a solid foundation for the study's findings and recommendations. The data collection methods, such as surveys, interviews, and user feedback analysis, are appropriate for understanding users' perspectives and experiences.

The analysis of the collected data is thorough and well-presented, allowing for meaningful insights and conclusions. The thesis effectively discusses the findings in relation to the research objectives and highlights the implications for both theory and practice. The inclusion of recommendations for optimizing UOU's LMS based on the study's results is particularly valuable, as it provides actionable steps for improving the user experience and learner retention.

The overall structure and organization of the thesis are coherent and logical, facilitating a clear understanding of the research process and findings. The language used is precise and academic, maintaining a consistent tone throughout the manuscript.

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Recommendation: the Ph.D. thesis titled "Optimization of Learning Management System to Improve User Experience & Learner Retention: A case study of Uttarakhand Open University" is a well-executed study that successfully achieves its stated objectives. The thesis offers valuable insights into the optimization of learning management systems and provides practical recommendations for enhancing user experience and learner retention. Therefore, it is recommended to award the Ph.D. thesis with no changes in the manuscript.

During the viva voce examination for the thesis titled "Optimization of Learning Management System to Improve User Experience & Learner Retention: A case study of Uttarakhand Open University," the following questions can be asked to the candidate:

1. Can you provide a brief overview of your research objectives and how you addressed them in your study?
2. How did you compare the user experience of the online courses hosted on Uttarakhand Open University's LMS with other platforms? What criteria or metrics did you use for this comparison?
3. What were the key factors that you identified as influencing users' experience of using the LMS platform hosted by Uttarakhand Open University? How did you determine these factors?
4. How does your research fit into the larger academic and practical discourse on user experience and learner retention in online education? Are there any future research directions that you would suggest based on your study?
5. Were there any challenges or limitations you encountered during the research process? How did you address them?

Prof. (Dr.) Ashutosh Gupta

Director, School of Science, Uttar Pradesh Rajarshi Tandon Open University, Prayagraj, Uttar Pradesh

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PROFORMA FOR THE WRITING Ph.D. VIVA REPORT

- 1- Name of the Candidate **Balam Singh Dafouti**
- 2- Subject - **Computer Science/School of Computer Science & IT**
- 3- Name of the Doctorate Degree - **Ph.D. in Computer Science**
- 4- Title of thesis
Optimization of Learning Management System to Improve User Experience & Learner Retention: A case study of Uttarakhand Open University
- 5- Name of the examiner with full postal address
Dr. Rajeev Singh, Professor, Department of Computer Engineering, College of Technology, GBPUA&T, Pantnagar, Udham Singh Nagar (Uttarakhand)

REPORT

The Ph.D. thesis titled "Optimization of Learning Management System to Improve User Experience & Learner Retention: A case study of Uttarakhand Open University" addresses several research questions related to the challenges faced by learners and educators in using the LMS of Uttarakhand Open University, strategies for improving user experiences and learner retention in the LMS, optimization strategies for the LMS, criteria for selecting LMS tools, effectiveness of LMS in learning programming, students' perceived needs of the LMS, and characteristics of students enrolled in a programming course.

It is evident during the thesis review that the research objectives have been effectively addressed. The thesis provides insights into optimizing the Learning Management System (LMS) of Uttarakhand Open University to enhance user experience and learner retention. The thesis demonstrates a thorough investigation of the major challenges faced by learners and educators when using the LMS of Uttarakhand Open University. By identifying these challenges, the author highlights areas for improvement and sets the foundation for the subsequent research objectives.

The study delves into strategies for enhancing user experiences and learner retention in the LMS, providing practical recommendations for optimizing the system. The proposed optimization strategies exhibit a comprehensive understanding of the LMS in the specific context of Uttarakhand Open University. The study examines students' perceived needs of the LMS, which is essential for designing user-centered systems. By understanding the expectations and requirements of the students, the author can make informed recommendations for improving the LMS interface, features, and functionalities.

The research objectives are clearly defined and successfully achieved throughout the thesis. The methodology employed is appropriate, and the data collection methods utilized, such as surveys, interviews, and data analysis, align with the research questions. The findings are well-presented, and the conclusions drawn are supported by the data.

Dr. Rajeev Singh
05/07/23

Dr. Rajeev Singh
05/07/23

he thesis work complies with the following requirements:

- (a) It is a piece of research work characterized by a fresh approach towards the interpretation of facts or theories.
- (b) It is satisfactory in point of language and presentation of subject matter

Based on the evaluation of the research objectives and outcomes, it is recommended to award the Ph.D. thesis titled "Optimization of Learning Management System to Improve User Experience & Learner Retention: A case study of Uttarakhand Open University" with no changes.

The Examiner recommends that the candidate be admitted to the degree.

Questions for Viva-Voce

1. How did you collect and analyze data in your study? Have you used any software tool like frontend forms, google forms etc. for the data collection purpose? how did you ensure the reliability and validity of your findings?
2. You have opted for only three LMS: UOU, SWAYAM and NSOU. Any specific reasons for selecting only these LMS in your study?
3. Can you discuss the significance of your research w.r.t. LMS and user experience? How does your work contribute to the existing knowledge?
4. Based on your findings, what practical recommendations would you give to Uttarakhand Open University for optimizing their LMS? How feasible do you consider these recommendations?
5. Could you explain in detail the modules that you proposed for optimizing the LMS and enhancing user experience? How did you arrive at these specific modules?

Dated 04/07/23

Rajeev Singh
(Signature of the Examiner)

(If necessary blank sheets may be added to complete the report)

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