websites plays crucial role for the ranking purpose. Fuzzy logic and K-means clustering methods have shown their usefulness to obtain important and accurate results. The problem of identifying most appropriate website has been addressed in this work and the solution offered by the proposed method may provide personalized need of the learner users to feed their brains with knowledge in individually suited way. This is made possible because of using various decisive criteria with inherent mathematical usage or application of fuzzy logic and K-means clustering.

Identifying the usefulness of the educational websites is also addressed by the proposed ranking method with reduced time and complexity issues in a web environment full of perplexities. Reduced time of searching towards identifying appropriate destination demonstrate the effectiveness of the proposed method.

Evaluation of the proposed method shows that its produced ranking converges with the personalized educational website priority ordering of each individual student learner. Thus, the proposed ranking ensures satisfaction and benefits to student learners at individual and personalised level.

As a matter of fact, the proposed method is tested on the data set of engineering domain student learners' feedback responses. Tests in other educational domains are to be carried in future by incorporating varied utility finding decisive criteria. Use of other machine learning techniques like ANN, fuzzy C-means clustering to extend the proposed method may increase the efficiency of the identification and ranking which are left for future research.

REFERENCES

- [1] Kohli, S., Mehrotra, S. (2016). A clustering approach for optimization of search result. Journal of Images and Graphics, 4(1): 63-66. https://doi.org/10.18178/joig.4.1
- [2] Nagpal, R., Mehrotra, D., Bhatia, P.K., Sharma A. (2015). FAHP approach to rank educational websites on usability. International Journal of Computing and Digital Systems, 4(4): 251-260. https://doi.org/10.12785/ijcds/040404
- [3] Grbovic, M., Djuric, N., Guo, S., Vucetic, S. (2013). Supervised clustering of label ranking data using label preference information. Machine Learning, 93(2-3): 191-225. https://doi.org/10.1007/s10994-013-5374-3
- [4] Kathuria, A., Jansen, B.J., Hafernik, C., Spink, A. (2010). Classifying the user intent of web queries using k-means clustering. Internet Research, 20(5): 563-581. http://dx.doi.org/10.1108/10662241011084112
- [5] Lu, P., Cong, X. (2015). The research on webpage ranking algorithm based on topic-expert documents. Recent Advances in Information and Communication Technology 2015, pp. 195-204.

- https://doi.org/10.1007/978-3-319-19024-2 20
- [6] Srikala, S., Geetha, P., Sampath, P. (2017). Certain issues in web page prediction, classification and clustering in data mining. International Journal of Advanced Engineering, Management and Science (IJAEMS), 3(3): 205-208. https://dx.doi.org/10.24001/ijaems.3.3.9
- [7] Krishen A.S. (2013). First impressions count: exploring the importance of website categorisation. International Journal of Computer Applications in Technology, 47(1): 32-43. https://doi.org/ 10.1504/ijcat.2013.054300
- [8] Kapoor, A., Singhal, A. (2017). A comparative study of K-means, K-means++ and fuzzy C-means clustering algorithms. 2017 3rd International Conference on Computational Intelligence & Communication Technology (CICT), IEEE, pp. 1-6. http://dx.doi.org/10.1109/CIACT.2017.7977272
- [9] Gabriel, M.S.L., William, P., Juan, D.L.V. (2014). Fundamentals of a fuzzy inference system for educational evaluation. 2014 International Conference on Mathematics and Computers in Sciences and in Industry (MCSI), IEEE, pp. 42-47. https://doi.org/10.1109/MCSI.2014.58
- [10] Kumar, G., Duhan, N., Sharma, A.K. (2011). Page ranking based on number of visits of links of Web page. 2011 2nd International Conference on Computer and Communication Technology (ICCCT), IEEE, pp. 11-14. https://doi.org/ 10.1109/iccct.2011.6075206
- [11] Zeng, W., Li, J. (2014). Fuzzy logic and its application in football team ranking. The Scientific World Journal, 1–6. https://doi.org/10.1155/2014/291650
- [12] Herrera-Viedma, E., Pasi, G., Lopez-Herrera, A.G., Porcel, C. (2006). Evaluating the information quality of web sites: A methodology based on fuzzy computing with words. Journal of the American Society for Information Science and Technology, 57(4): 538-549. https://doi.org/10.1002/asi.20308
- [13] Sabry, K., Baldwin, L. (2003). Web-based learning interaction and learning styles. British Journal of Educational Technology, 34(4): 443-454. https://doi.org/10.1111/1467-8535.00341
- [14] Goodarzi, M.H., Amiri, A. (2009). Evaluating students' learning progress by using fuzzy inference system. 2009 Sixth International Conference on Fuzzy Systems and Knowledge Discovery (FSKD'09), IEEE, pp. 561-565. https://doi.org/10.1109/FSKD.2009.313
- [15] Asopa P, Asopa S. (2016). Evaluating student performance using fuzzy inference system in fuzzy ITS. 2016 International Conference on Advances in Computing, Communications and Informatics (ICACCI), IEEE, pp. 1847-1851. http://dx.doi.org/10.1109/ICACCI.2016.7732318