

References

- [1] L. Sundli, “Mentoring—a new mantra for education?” *Teaching and Teacher Education*, vol. 23, no. 2, pp. 201–214, 2007.
- [2] Martha, “Role and Importance of Mentoring in Education,” Sanjeev Datta Personality School, Feb. 15, 2022. Available at: <https://sanjeevdatta.com/importance-of-mentoring-in-education/>. (accessed Aug. 25, 2023).
- [3] N. Cronin, “The Powerful Benefits Of Mentoring,” Guider, Nov. 23, 2019. Available at: <https://guider-ai.com/blog/mentoring-benefits/>, (accessed Aug. 25, 2023).
- [4] L. Dimmock, “New UK research: Mentoring is improving gender balance in organisations,” Moving Ahead, Sep. 07, 2017. Available at: <https://www.women-ahead.org/press/turning-the-dial> (accessed Aug. 26, 2023).
- [5] F. Furedi, “University students - are they toddlers or young adults?,” The Independent, Mar. 07, 2013. Available at: <https://www.independent.co.uk/voices/comment/university-students-are-they-toddlers-or-young-adults-8524268.html> (accessed Aug. 26, 2023).
- [6] PushFar Organization, “Bath Spa University - PushFar’s Mentoring Case Study,” Available at: <https://www.pushfar.com/case-studies/mentoring/bath-spa/>, (accessed Aug. 26, 2023).
- [7] Department of Education, US, “Issue Brief: Early Warning Systems,” National Survey on High School Strategies Designed to Help At-risk undergraduate students Graduate (HSS) Project, funded by U.S. Department of Education, Office of Planning, Evaluation and Policy Development Policy and Program Studies Service, Sep. 2016.
- [8] R.E. Slavin, & N. A. Madden, “What works for students at risk: A research synthesis”, *Educational Leadership*, Vol. 46, no. 05, pp. 4–13, 1989.
- [9] M. Liz-Domínguez, M. Caeiro-Rodríguez, M. Llamas-Nistal, and F. Mikic-Fonte, “Predictors and Early Warning Systems in Higher Education -A Systematic Literature Review,” Spain, 2019.
- [10] S. Plak, I. Cornelisz, M. Meeter, and C. Klaveren, “Early warning systems for more effective student counseling in higher education: Evidence from a Dutch field experiment,” *Higher Education Quarterly*, Feb. 2021.
- [11] S. Aguilar, S. Lonn, and S. D. Teasley, “Perceptions and use of an early warning system during a higher education transition program,” *Proceedings of*

the Fourth International Conference on Learning Analytics And Knowledge, Mar. 2014.

- [12] L. G. Lunsford, G. Crisp, E. L. Dolan, and B. Wuetherick, “Mentoring in Higher Education,” in *The SAGE Handbook of Mentoring*, D. A. Clutterbuck, F. K. Kochan, L. G. Lunsford, N. Dominguez, and J. Haddock-Millar, Eds., SAGE Publications Ltd, 2017, pp. 316–334. Accessed: Sep. 25, 2023. [Online]. Available: <https://sk.sagepub.com/reference/the-sage-handbook-of-mentoring>.
- [13] H. Dorner, G. Mistic, and M. Rymarenko, “Online mentoring for academic practice: strategies, implications, and innovations,” *Annals of the New York Academy of Sciences*, vol. 1483, no. 1, pp. 98–111, Jan. 2020.
- [14] D. Baneres, M. E. Rodriguez, and M. Serra, “An Early Feedback Prediction System for Learners At-Risk Within a First-Year Higher Education Course,” *IEEE Transactions on Learning Technologies*, vol. 12, no. 2, pp. 249–263, Apr. 2019.
- [15] E. Howard, M. Meehan, and A. Parnell, “Contrasting prediction methods for early warning systems at undergraduate level,” *The Internet and Higher Education*, vol. 37, pp. 66–75, Apr. 2018.
- [16] M. Yağcı, “Educational data mining: prediction of students’ academic performance using machine learning algorithms,” *Smart Learning Environments*, vol. 9, no. 1, Mar. 2022.
- [17] L. P. Macfadyen and S. Dawson, “Mining LMS data to develop an ‘early warning system’ for educators: A proof of concept,” *Computers & Education*, vol. 54, no. 2, pp. 588–599, Feb. 2010.
- [18] X. Wang, B. Guo, and Y. Shen, “Predicting the At-Risk Online Students Based on the Click Data Distribution Characteristics,” *Scientific Programming*, vol. 2022, pp. 1–12, Mar. 2022.
- [19] C. J. Arizmendi et al., “Predicting student outcomes using digital logs of learning behaviors: Review, current standards, and suggestions for future work,” *Behavior Research Methods*, Aug. 2022.
- [20] J. B. Osborne and A. S. I. D. Lang, “Predictive Identification of At-risk undergraduate students: Using Learning Management System Data,” *Journal of Postsecondary Student Success*, vol. 2, no. 4, pp. 108–126, Jul. 2023.
- [21] J. E. Raffaghelli, M. E. Rodríguez, A.-E. Guerrero-Roldán, and D. Bañeres, “Applying the UTAUT model to explain the students’ acceptance of an early warning system in Higher Education,” *Computers & Education*, vol. 182, p. 104468, Jun. 2022.

- [22] D. Sansone, “Beyond Early Warning Indicators: High School Dropout and Machine Learning,” *Oxford Bulletin of Economics and Statistics*, vol. 81, no. 2, pp. 456–485, Nov. 2018.
- [23] C. Haas, M. Hall and S.L.Vlasnik, “Finding optimal mentor-mentee matches: A case study in applied two-sided matching”, *Heliyon* 4 (2018), Article no: e00634, doi: 10.1016 /j.heliyon.2018.e00634, 2018.
- [24] H.V. Pham et.al., “Mentor and mentee matching,” *Journal of Intelligent and Fuzzy Systems*, vol. 45, no. 3, pp. 4071–4087, Aug. 2023.
- [25] M. M. Corley, "Youth Mentoring: Factors That Contribute to the High Number of Short-Term Matches and Implementing Preventative Strategies", *Digital Commons @ ACU, Electronic Theses and Dissertations*. Paper 262, 2020.
- [26] J. B. Heppen, K. Zeiser, D. J. Holtzman, M. O'Cummings, S. Christenson and A. Pohl, “Efficacy of the Check & Connect Mentoring Program for At-Risk General Education High School Students”, *Journal of Research on Educational Effectiveness*, DOI: 10.1080/19345747.2017.1318990, 2017.
- [27] J. Grewe and H. Kleiner, "Chapter 19- The Connections Program: Integrating Mentoring Into the First-Year Experience", *Making Connections*. Paper 21, 2023.
- [28] M. Kravčik, K. Schmid and C. Igel., ‘Towards Requirements for Intelligent Mentoring Systems’, *ABIS'19: 23rd International Workshop on Personalization and Recommendation on the Web and Beyond Proceedings*. ACM, New York, NY, USA, 3 pages. doi:<https://doi.org/10.1145/3345002.3349290>, Germany, 2019.
- [29] A. Sithole, E. Chiyaka, P. Mccarthy, D. Mupinga, B. Bucklein, and J. Kibirige, “Student Attraction, Persistence and Retention in STEM Programs: Successes and Continuing Challenges,” *Higher Education Studies*, vol. 7, no. 1, pp46-59, Dec. 2017.
- [30] “Low grades in intro STEM courses may disproportionately deter minority students”, *Eberly College of Science*, [science.psu.edu. https://science.psu.edu/news/Brown9-28](https://science.psu.edu/news/Brown9-28) (accessed 25th Nov, 2023).
- [31] C.-C. Yu and Y. (Leon) Wu, “Early Warning System for Online STEM Learning—A Slimmer Approach Using Recurrent Neural Networks,” *Sustainability*, vol. 13, no. 22, p. 12461, Nov. 2021.
- [32] M. L. Bernacki, M. M. Chavez, and P. M. Uesbeck, “Predicting achievement and providing support before STEM majors begin to fail,” *Computers & Education*, vol. 158, p. 103999, Dec. 2020.

- [33] F. Marbouti, H. A. Diefes-Dux, and K. Madhavan, "Models for early prediction of at-risk undergraduate students in a course using standards-based grading," *Computers & Education*, vol. 103, pp. 1–15, Dec. 2016.
- [34] R. A. J. Kumar, "Early Warning System In Education," *International Journal of Advanced Research and Publications*, vol. 2, no. 9, pp. 115–117, Sep. 2018.
- [35] M. Adnan, A. Habib, J. Ashraf, S. Mussadiq, A. A. Raza, M. Abid, et al., "Predicting at-risk undergraduate students at different percentages of course length for early intervention using machine learning models", *IEEE Access*, vol. 9, pp. 7519-7539, 2021.
- [36] A. Marwaha and A. Singla, "A Study of Factors to Predict At-risk undergraduate students Bason Machine Learning Techniques," *Advances in Intelligent Systems and Computing*, pp. 133–141, Aug. 2019.
- [37] Y.-S. Su, Y.-D. Lin, and T.-Q. Liu, "Applying machine learning technologies to explore students' learning features and performance prediction," *Frontiers in Neuroscience*, vol. 16, Dec. 2022.
- [38] G. Akçapınar, A. Altun, and P. Aşkar, "Using learning analytics to develop early-warning system for at-risk undergraduate students," *International Journal of Educational Technology in Higher Education*, vol. 16, no. 1, Oct. 2019.
- [39] P. Xu, X. Ji, M. Li, et al. "Small data machine learning in materials science", *npj Computational Materials*, vol 9, article no. 42, 2023.
- [40] Emerald Group Publishing Limited, "Matching mentors with mentees : Practical, evidence-based recommendations", *Human resource management international digest*, Vol. 30, Issue 7, pp. 43 – 45, 2022.
- [41] N. L. Keramidas, J. E. Queener, and P. J. Hartung, "Forming mentoring relationships in graduate education: The role of personality". *Australian Journal of Career Development*, 31(2), pp. 118-129, (2022).
- [42] W. Zhao, X. Liu, S. Shah, I. Baah, A. Patel and N. Wise, "Peer Support in Smart Learning and Education," 2021 IEEE SmartWorld, Ubiquitous Intelligence & Computing, Advanced & Trusted Computing, Scalable Computing & Communications, Internet of People and Smart City Innovation (SmartWorld/SCALCOM/UIC/ATC/IOP/SCI), Atlanta, GA, USA, , pp. 598-605, 2021.
- [43] C. Garcia, "The Moderating Role of Goal Orientation in Gamified Instruction: An Extension of the Theory of Gamified Learning," *Master of Science in Psychology Dissertation*, Illinois Institute of Technology, ProQuest Dissertations Publishing, 2019.
- [44] C. G. Lechuga, S. Doroudi, "Three Algorithms for Grouping Students: A Bridge Between Personalized Tutoring System Data and Classroom

Pedagogy”, *International Journal of Artificial Intelligence in Education*, vol 33, pp- 843–884 (2023).

- [45] H. Pursell “Mentor Matching: 7 Key Elements to Consider | Guider AI,” Feb. 22, 2024. Accessed: Feb 29, 2024. [Online]. Available: <https://guider-ai.com/blog/mentor-matching-key-elements>
- [46] J. Ma, S. Chen, and Y. Xu, “Fuzzy logic from the viewpoint of machine intelligence,” *Fuzzy Sets and Systems*, vol. 157, no. 5, pp. 628–634, Mar. 2006.