

REFERENCES

- [1] L. Pappano, "The Year of the MOOC," *The New York Times*, vol. 2, no. 12, 2012.
- [2] K. Alraimi, Z. Hangjung and C. Andrew, "Understanding the MOOCs continuance: The role of openness and reputation," *Computers & Education*, vol. 80, pp. 28-38, 2015.
- [3] D. G. Glance, M. Forsey and R. Myles, "The pedagogical foundations of massive open online courses," *First Monday*, vol. 18, no. 5, 2013.
- [4] R. Ferguson and C. Doug, "Examining engagement: analysing learner subpopulations in massive open online courses (MOOCs).", in *In Proceedings of the 5th International Conference on Learning Analytics and Knowledge*, 2015.
- [5] J. Reich and R.-V. José, "The MOOC pivot," *Science*, vol. 363, no. 6423, pp. 130-131, 2019.
- [6] J. Daniel, "Making sense of MOOCs: Musings in a maze of myth, paradox and possibility," *Journal of Interactive Media in Education*, vol. 3, 2012.
- [7] M. Bali, "MOOC pedagogy: Gleaning good practice from existing MOOCs," *Journal of Online Learning and Teaching*, vol. 10, no. 1, pp. 44-54.
- [8] L. Rothkrantz, "New Didactic Models for MOOCs," in *In Proceedings of the 9th International Conference on Computer Supported Education (CSEDU)*, 2017.
- [9] C. Bonk, W. Robert and L. Ji-Yeon, "Moderating learner-centered e-learning: Problems and solutions, benefits and implications," *In Online collaborative learning: Theory and practice*, no. IGI Global, pp. 54-85, 2004.
- [10] L. Song, E. S. Singleton, R. H. Janette and H. K. Myung, "Improving online learning: Student perceptions of useful and challenging characteristics," *The Internet and Higher Education*, vol. 7, no. 1, pp. 59-70, 2004.
- [11] K. Douglas, W. Z. Mitchell, M. Hillary, A. D.-D. Heidi and B. Peter, "Meaningful learner information for MOOC instructors examined through a contextualized evaluation framework," *International Review of Research in Open and Distributed Learning*, vol. 20, no. 1, 2019.
- [12] C. P. Rosé, G. Pam, Z. S. Jennifer and R. Lauren, "Supportive technologies for group discussion in MOOCs," *Current Issues in Emerging eLearning*, vol. 2, p. 5, 2015.
- [13] Z. Saijing, W. Pamela, R. Mary Beth and M. C. John, "Ask the instructors: Motivations and challenges of teaching massive open online courses," in *In Proceedings of the 19th ACM Conference on Computer-Supported Cooperative Work & Social Computing*. 206–221., 2016.
- [14] M. Crosslin, "From instructivism to connectivism: theoretical underpinnings of MOOCs," *Current Issues in Emerging eLearning*, vol. 3, no. 1, 2016.
- [15] J. Knox, "Digital culture clash: “massive” education in the E-learning and Digital Cultures MOOC," *Distance Education*, vol. 35, no. 2, pp. 164-177,

- 2014.
- [16] F. Agrusti, A. Poce and M. Re, "Mooc design and heritage education. Developing soft and work-based skills in higher education students," *Journal of E-Learning and Knowledge Society*, vol. 13, no. 3, 2017.
 - [17] D. Rogers, "A paradigm shift: Technology integration for higher education in the new millennium," *AACE Journal* , vol. 1, no. 13, pp. 19-33, 2000.
 - [18] R. M. Bernard and R. Beatriz Rojo de, "Collaborative online distance learning: Issues for future practice and research," *Distance Education*, vol. 21, no. 2, pp. 260-277, 2000.
 - [19] C. McLoughlin and O. Ron, "Maximising the language and learning link in computer learning environments," *British Journal of Educational Technology* , vol. 29, no. 2, pp. 125-136, 1998.
 - [20] P. Rodes, C. Haejin, C. Carrie and K. Dennis, "Evaluating the Effects of Web-based Collaboration in a Distance Education Program.," *EdMedia+ Innovate Learning Association for the Advancement of Computing in Education*, pp. 1715-1716. , 2000.
 - [21] C. J. Bonk and D. Vanessa, "Teaching on the Web: With a little help from my pedagogical friends," *Journal of Computing in Higher Education* , vol. 11, no. 3, 1999.
 - [22] J. Stephenson, "Learner Managed Learning: An Emerging Pedagogy for Online Learning?," *NEW ERA IN EDUCATION*, vol. 83, no. 3, 2002.
 - [23] G. Veletsianos, C. Amy and S. Emily, "Digging deeper into learners' experiences in MOOC s: Participation in social networks outside of MOOC s, notetaking and contexts surrounding content consumption," *British Journal of Educational Technology*, vol. 46, no. 3, pp. 570-587, 2015.
 - [24] M. F. Paulsen, "Moderating educational computer conferences," *Computer Mediated Communication and the On-line Classroom* , vol. 3, pp. 81-89, 1995.
 - [25] J. David, "Toward CS1 at scale: building and testing a MOOC-for-credit candidate," in *In Proceedings of the Fifth Annual ACM learning at Scale* , 2018.
 - [26] B. Holmberg, "The evolution of the character and practice of distance education Open Learning:," *The Journal of Open, Distance and e-Learning* , vol. 10, no. 2, pp. 47-53, 1995.
 - [27] J. Murphy, K. Nadzeya, H.-T. Laurel and C. Lorenzo, "Online learning and MOOCs: A framework proposal," *In Information and Communication Technologies in Tourism* , pp. 847-858, 2015.
 - [28] S. Tucker, "Distance education: Better, worse, or as good as traditional education?," *Online journal of distance learning administration*, vol. 4, no. 4, 2001.
 - [29] M. Hannay and N. Tracy, "Perceptions of distance learning: A comparison of online and traditional learning," *Journal of Online Learning and Teaching* , vol. 2, no. 1, pp. 1-11., 2006.
 - [30] D. L. Thomson, "Beyond the classroom walls: Teachers' and students'

- perspectives on how online learning can meet the needs of gifted students," *Journal of Advanced Academics* , vol. 21, no. 4, pp. 662-712, 2010.
- [31] K. Kyong-Jee, L. Shijuan and B. Curtis J, "Online MBA students' perceptions of online learning: Benefits, challenges, and suggestions," *The Internet and Higher Education*, vol. 8, no. 4, pp. 335-344, 2005.
- [32] W. G. Bowen, M. C. Matthew, A. L. Kelly and I. N. Thomas, "Interactive learning online at public universities: Evidence from a six-campus randomized trial," *Journal of Policy Analysis and Management* , vol. 33, no. 1, pp. 94-111, 2014.
- [33] A. Rossett, "Waking in the night and thinking about e-learning.," in *The ASTD e-learning handbook*, McGraw-Hill, 2002, pp. 2-18.
- [34] C. M. Cheung and K. L. Matthew, "Understanding the sustainability of a virtual community: model development and empirical test," *Journal of Information Science*, vol. 35, no. 3, pp. 279-298, 2009.
- [35] R. Carolyn Penstein, C. Ryan, Y. Diyi, W. Miaomiao, R. Lauren, G. Pam and S. Jennifer, "Social factors that contribute to attrition in MOOCs," in *In Proceedings of the first ACM conference on Learning at Scale*, 2014.
- [36] K. Benjamin, "Understanding social presence in text-based online learning environments.," *Distance Education* , vol. 29, no. 1, p. 89-106, 2008.
- [37] A. Rovai, J. W. Mervyn and L. Jing, "School climate," *Quarterly Review of Distance Education*, vol. 6, no. 4, 2005.
- [38] A. T. Bates, *Teaching in a digital age: Guidelines for designing teaching and learning*, 2nd ed., Tony Bates Associates Ltd, 2018.
- [39] F. L. Wang, F. Joseph and K. Reggie C., *Handbook of research on hybrid learning models: Advanced tools, technologies, and applications.*, IGI Global, 2010.
- [40] E. L. Thorndike, "The original nature of man," *Educational psychology*, vol. 1, 1913.
- [41] I. P. Pavlov, "Conditioned reflexes," *Singapore Med* , vol. 51, no. 1, 2010.
- [42] B. Skinner, *Neurosciences and Mental Health Therapies*, 1974.
- [43] F. I. M. Craik and R. S. Lockhart, "Levels of processing: A framework for memory research," *Journal of Verbal Learning and Verbal Behavior*, vol. 11, pp. 671-684, 1972.
- [44] P. A. Cooper, " Paradigm shifts in designing instruction: From behaviorism to cognitivism to constructivism," *Educational Technology*, vol. 33, no. 5, pp. 12-19, 1993.
- [45] T. Janicki and J. O. Liegle, "Development and evaluation of a framework for creating web-based learning modules: a pedagogical and systems perspective," *Journal of Asynchronous Learning Networks*, vol. 5, no. 1, pp. 58-84, 2001.
- [46] T. W. Malone, "Toward a theory of intrinsically motivating instruction," *Cognitive science* , vol. 5, no. 4, pp. 333-369, 1981.
- [47] J. M. Keller and S. Katsuaki, "Application of the ARCS model to courseware

- design," *Instructional designs for microcomputer courseware*, vol. 1, pp. 401-434, 1988.
- [48] D. R. Garrison and A. J. Ben, "Researching the community of inquiry framework: Review, issues, and future directions," *The and Higher Education* , vol. 10, no. 3, pp. 157-172, 2007.
- [49] D. R. Garrison, A. Terry and A. Walter, "The first decade of the community of inquiry framework: A retrospective," *The Internet and Higher Education*, vol. 13, no. 12, pp. 59-64, 2010.
- [50] S. Downes, "Places to go: Connectivism & connective knowledge," *Innovate: Journal of Online Education* , vol. 5, no. 1, p. 6, 2008.
- [51] G. Siemens, "Connectivism:A Learning Theory for the Digital Age," *International Journal of Instructional Technology and Distance Learning*, vol. 2, no. 1, 2005.
- [52] B. Maha, C. Maureen, J. Rhonda, S. Paul and Z. Mia, "What makes a cMOOC community endure? Multiple participant perspectives from diverse cMOOCs," *Journal Educational Media International*, vol. 52, no. 2, pp. 100-115, June 2015.
- [53] M. Anoush, B. Manuela and L. Allison, "Instructional quality of Massive Open Online Courses (MOOCs)," *Computers and Education*, vol. 80, pp. 77-83, Feb 2014.
- [54] D. G. Glance, M. Forsey and R. Myles, "The pedagogical foundations of massive open online courses," *First Monday* , vol. 18, no. 5, 2013.
- [55] G. Conole, "MOOCs as disruptive technologies: strategies for enhancing the learner experience and quality of MOOCs," *Revista de Educación a Distancia* , vol. 39, 2013.
- [56] S. Joksimović, P. Oleksandra, K. N. D. Vitomir, M. Caitlin, G. Dragan, D. Shane, G. Arthur C. and B. Christopher, "How do we model learning at scale? A systematic review of research on MOOCs," *Review of Educational Research*, vol. 88, no. 1, pp. 43-86., 2018.
- [57] O. Skrypnyk, d. V. Pieter and H. Thieme, "Reconsidering retention in MOOCs: The relevance of formal assessment and pedagogy," in *In Proceedings of the 3rd International Conference on European MOOCs Stakeholder Summit*, 2015.
- [58] A. M. F. Yousef, A. C. Mohamed, S. Ulrik and W. Marold, ""What drives a successful MOOC? An empirical examination of criteria to assure design quality of MOOCs," in *IEEE 14th International Conference on Advanced Learning Technologies*, 2014.
- [59] J. Kennedy, "Characteristics of massive open online courses (MOOCs): A research review, 2009-2012," *Journal of Interactive Online Learning*, vol. 13, no. 1, 2014.
- [60] A. Creelman, E. Ulf and O. Ebba, "Perspectives on MOOC quality-An account of the EFQUEL MOOC Quality ProjectINNOQUAL," *International Journal for Innovation and Quality in Learning* , vol. 2, no. 3, pp. 78-87, 2014.

- [61] U.D. Ehlers, "Quality in e-Learning from a Learner's Perspective. European Journal of Open, Distance and E-Learning," *Distances et médiations des savoirs. Distance and Mediation of Knowledge*, vol. 23, 2018.
- [62] T. Nguyen, "The effectiveness of online learning: Beyond no significant difference and future horizons," *MERLOT Journal of Online Learning and Teaching*, vol. 11, no. 2, pp. 309-319, 2015.
- [63] G. Siemens, I. Valerie and C. ". Jillianne, "Guest editors' preface to the special issue on MOOCs: an academic perspective on an emerging technological and social trend," *Journal of Online Learning and Teaching*, vol. 9, no. 2, 2013.
- [64] S. Uvalić-Trumbić and J. Daniel, "Innovative forms of Quality Assurance for Innovative Programmes. (p. 103).," in *In The Online, Open and Flexible Higher Education Conference*, 2016.
- [65] K. Shattuck, "Research inputs and outputs of Quality Matters: Update to 2012 and 2014 versions of What We're Learning from QM-Focused Research," *Annapolis, MD: Quality Matters*, 2015.
- [66] A. Margaryan, B. Manuela and L. Allison, "Instructional quality of massive open online courses (MOOCs)," *Computers & Education*, pp. 77-83, 2015.
- [67] L. Walker and L. Birgit, "Academics' perceptions on the quality of MOOCs: An empirical study," *INNOQUAL-International Journal for Innovation and Quality in Learning*, vol. 2, no. 3, pp. 53-63, 2014.
- [68] C. Dede, "Technological supports for acquiring 21st century skills," *International Encyclopedia of Education*, vol. 3, pp. 158-166, 2010.
- [69] L. Larson and N. M. Teresa, "21st century skills: Prepare students for the future," *Kappa Delta Pi Record*, vol. 47, no. 3, pp. 121-132, 2011.
- [70] H. Jenkins, K. Clinton, R. Purushotma, A. J. Robison and M. Weigel, *Confronting the challenges of participatory culture: Media education for the twenty-first century*, Chicago, IL: MacArthur Foundation, 2007.
- [71] D. Clark, S. Victor, S. Karsten, M. Miika, K. Ingo, J. Jeroen, E. Gijsbert, W. Armin, M. Muhsin and L. Leena, "Online learning environments, scientific argumentation, and 21st century skills," *E-Collaborative Knowledge Construction: Learning From Computer-Supported and Virtual Environments*, pp. 1-39, 2010.
- [72] C. Dede, "Comparing frameworks for 21st century skills," *21st Century Skills: Rethinking How Students Learn*, vol. 20, pp. 51-76, 2010.
- [73] D. Clark, S. Victor, S. Karsten, M. Miika, K. Ingo, J. Jeroen, W. Armin, M. Muhsin, E. Gijsbert and L. Leena, "Scaffolding Scientific Argumentation Between Multiple Students in Online Learning Environments to Support the Development of 21st Century Skills," in *In the National Academies' Board on Science Education workshop on Exploring the Intersection of Science Education and 21st Century Skills, the National Institutes of Health Office of Science Education*, 2009.
- [74] E. Care, G. Patrick and M. Barry, *Assessment and teaching of 21st century skills*, Springer, 2012.
- [75] M. Frydenberg and A. Diana, "Learning for 21st century skills," in *In IEEE*

- International Conference on Information Society (i-Society, 2011.*
- [76] F. Colace, D. S. Massimo and V. Mario, "Evaluating on-line learning platforms: a case study," in *In IEEE 36th Annual Hawaii International Conference on System Sciences*, Hawaii, 2003.
 - [77] A. Nanjappa and G. Michael M, "Constructing on constructivism: The role of technology," *Electronic Journal for the Integration of Technology in Education*, vol. 2, no. 1, pp. 38-56, 2003.
 - [78] M. Khalil, B. Hubert and E. Martin, "Evaluation grid for xMOOCs," *International Journal of Emerging Technologies in Learning*, vol. 10, no. 4, 2015.
 - [79] B. Trilling and F. Charles, 21st century skills: Learning for life in our times, John Wiley & Sons, 2009.
 - [80] A. J. Romero, 2016. [Online]. Available: http://www.theintelligencer.com/local_news/article_edbc59f2-b305-11e5-8673-6f3a144c1af3.html.
 - [81] G. Fischer, "Beyond hype and underestimation: identifying research challenges for the future of MOOCs," *Distance Education*, vol. 35, no. 2, pp. 149-158, 2014.
 - [82] B. Trilling and F. Charles, 21st century skills: Learning for life in our times., John Wiley & Sons, 2009.
 - [83] E. Silva, Measuring Skills for the 21st Century. Education Sector Reports, Education Sector (2008)., 2008.
 - [84] W. E. Forum, "The future of jobs: Employment, skills and workforce strategy for the fourth industrial revolution," Geneva, 2016.
 - [85] G. Fischer, "Beyond hype and underestimation: identifying research challenges for the future of MOOCs," *Distance Education*, vol. 35, no. 2, pp. 149-158, 2014.
 - [86] D. H. Welsh and D. Mariana, "The new generation of massive open online course (MOOCS) and entrepreneurship education," *Small Business Institute Journal* , vol. 9, no. 1, pp. 51-65, 2013.
 - [87] L. Atiaja and R. Guerrero, "MOOCs: Origin, characterization, principal problems and challenges in Higher Education," *Journal of e-Learning and Knowledge Society*, vol. 12, no. 1, pp. 65-76, 2016.
 - [88] L. Shu-Sheng, "Investigating students' perceived satisfaction, behavioral intention, and effectiveness of e-learning: A case study of the Blackboard system," *Computers and Education*, vol. 51, pp. 864-873, 2008.
 - [89] S. S. Noesgaard and Ø. Rikke, " "The Effectiveness of E-Learning: An Explorative and Integrative Review of the Definitions, Methodologies and Factors That Promote e-Learning Effectiveness," *Electronic Journal of E-learning* , vol. 13, no. 4, pp. 278-290, 2015.
 - [90] S. Marshall, "A Quality Framework for Continuous Improvement of E-Learning: The E-Learning Maturity Model," *Journal of Distance Education* , vol. 24, no. 1, pp. 143-166, 2010.

- [91] S. Kellogg, "Online learning: How to make a MOOC," *Nature*, vol. 499, no. 7458, pp. 369-371, 2013.
- [92] G. Conole, "A new classification schema for MOOCs," *The International Journal for Innovation and Quality in Learning*, vol. 2, no. 3, pp. 65-77, 2014.
- [93] N. Black, "Why we need qualitative research," *Journal of Epidemiology and Community Health*, vol. 48, no. 5, pp. 425-439, 1994.
- [94] B. G. Glaser and S. Anselm L., *Discovery of grounded theory: Strategies for qualitative research*, Routledge, 2017.
- [95] E. Crittenden, "Grounded theory: A research methodology for eLearning," *Malaysian Journal of Distance Education*, vol. 8, no. 1, pp. 1-13, 2006.
- [96] D. F. Onah, S. Jane and B. Russell, "Dropout rates of massive open online courses: behavioural patterns.," in *EDULEARN14 proceedings*, 2014.
- [97] L. Rothkrantz, "Dropout rates of regular courses and MOOCs," *In International Conference on Computer Supported Education*, pp. 25-46, 2016.
- [98] A. Strauss and C. Juliet, "Grounded theory methodology," *Handbook of Qualitative Research*, pp. 273-285, 1994.
- [99] L. Walker and L. Birgit, "Academics' perceptions on the quality of MOOCs: An empirical study," *International Journal for Innovation and Quality in Learning*, vol. 2, no. 3, pp. 53-63, 2014.
- [100] J. Creswell and N. P. Cheryl, *Qualitative inquiry and research design: Choosing among five approaches*, Sage publications, 2016.
- [101] B. Glaser and S. Anselm L., *Discovery of grounded theory: Strategies for qualitative research*, Routledge, 2017.
- [102] K. Charmaz, *Constructing grounded theory: A practical guide through qualitative analysis.*, Sage, 2006.
- [103] P. Sadler and G. Eddie, "The impact of self-and peer-grading on student learning," *Educational Assessment*, vol. 11, no. 1, pp. 1-31, 2006.
- [104] I. Jung, "The dimensions of e-learning quality: from the learner's perspective," *Educational Technology Research and Development*, vol. 59, no. 4, pp. 445-464, 2011.
- [105] J. Frydenberg, "Quality standards in eLearning: A matrix of analysis," *The International Review of Research in Open and Distributed Learning*, vol. 3, no. 2, 2002.
- [106] R. Schoolmaster, "The position of xMOOCs in educational systems," *e-Learning Technology and Education*, vol. 10, 2014.
- [107] F. Brouns, M. José, M. Lina, J. Darco, F. Santiago, S. Alejandro and T. António, "A networked learning framework for effective MOOC design: the ECO project approach," in *EDEN Research Workshop. Challenges for Research into Open & Distance Learning: Doing Things Better: Doing Better Things. Oxford, United Kingdom Budapest, Hungary: EDEN*, 2014.
- [108] B. M. Byrne, *Structural equation modeling with EQS: Basic concepts, applications, and programming*, Routledge, 2013.

- [109] J. Cohen, *Statistical Power Analysis for the Behavioral Sciences*—Second Edition, 12 Lawrence Erlbaum Associates Inc, 1988.
- [110] L. S. Meyers, G. Glenn and J. G. Anthony, *Applied multivariate research: Design and interpretation*, Sage publications, 2016.
- [111] L. J. Cronbach, "Coefficient alpha and the internal structure of tests," *psychometrika*, vol. 16, no. 3, pp. 297-334, 1951.
- [112] R. A. Peterson, "A meta-analysis of Cronbach's coefficient alpha.," *Journal of consumer research*, vol. 21, no. 2, pp. 381-391, 1994.
- [113] G. Dilrukshi, "Github link - Framework for evaluating effectiveness of MOOC," 2016. [Online]. Available: <https://github.com/iceLearn/Improving-effectiveness-of-MOOC-my-PhD-research-/blob/master/Evaluating%20effectiveness%20of%20MOOCs%20-%20Tool%20under%20creative%20commons%20license.pdf>.
- [114] C. Kulkarni, P. W. Koh, L. Huy, C. Daniel, P. Kathryn, C. Justin, K. Daphne and R. K. Scott, "Peer and self assessment in massive online classes," *ACM Transactions on Computer-Human Interaction (TOCHI)*, vol. 20, no. 6, pp. 1-31, 2013.
- [115] K. Reily, L. F. Pam and T. Loren, "Two peers are better than one: aggregating peer reviews for computing assignments is surprisingly accurate," *ACM 2009 International Conference on Supporting Group Work*, vol. 115-122, 2009.
- [116] Y. Kotturi, C. E. Kulkarni, B. Michael S. and K. Scott, "Structure and messaging techniques for online peer learning systems that increase stickiness," in *In Proceedings of the Second (2015) ACM Conference on Learning at Scale*, 2015.
- [117] T. Staubitz, P. Dominic, B. Matthias, R. Jan and M. Christoph, "Improving the peer assessment experience on MOOC platforms," in *In Proceedings of the third (2016) ACM conference on Learning at Scale*, 2016.
- [118] R. Lu and B. Linda, "A comparison of anonymous versus identifiable e-peer review on college student writing performance and the extent of critical feedback," *Journal of Interactive Online Learning*, vol. 6, no. 2, 2007.
- [119] A. Kluger and D. Angelo, "The effects of feedback interventions on performance: A historical review, a meta-analysis, and a preliminary feedback intervention theory," *Psychological Bulletin*, vol. 119, no. 2, p. 254, 1996.
- [120] C. Kulkarni, W. Koh Pang, L. Huy, C. Daniel, P. Kathryn, C. Justin, K. Daphne and .. K. Scott, "Peer and self assessment in massive online classes," *ACM Transactions on Computer-Human Interaction (TOCHI)*, vol. 20, no. 6, pp. 1-31, 2013.
- [121] K. Reily, L. F. Pam and T. Loren, "Two peers are better than one: aggregating peer reviews for computing assignments is surprisingly accurate.," in *In Proceedings of the ACM 2009 International Conference on Supporting Group Work*, , 2009.
- [122] L. V. Knight and S. Theresa A, "Adapting peer review to an online course: An exploratory case study," *Journal of Information Technology Education: Research*, vol. 10, no. 1, pp. 81-100, 2011.

- [123] K. Chinmay and M. K. S. Bernstein, "2015, March. PeerStudio: rapid peer feedback emphasizes revision and improves performance. I," in *In Proceedings of the second (2015) ACM Conference on Learning at scale* .
- [124] L. Knight and T. A. Steinbach, "Adapting peer review to an online course: An exploratory case study," *Journal of Information Technology Education: Research* 10,, vol. 10, no. 1, pp. 81-100, 2011.
- [125] S.-M. P. , T. , Kim and P. Marco, "Automatically assessing review helpfulness.," in *In Conference on Empirical Methods in Natural Language Processing* , 2006.
- [126] K. Chinmay, C. Julia, K. Yasmine, B. Michael S and K. Scott R, "Talkabout: Making distance matter with small groups in massive classes," in 2015, In Proceedings of the 18th ACM Conference on Computer Supported.
- [127] S. Bostock, "Student peer assessment," *Learning Technology*, vol. 5, no. 1, pp. 245-249, 2000.
- [128] W. Admiraal, H. Bart and V. d. V. Maarten, "Self-and peer assessment in massive open online courses," *International Journal of Higher Education*, vol. 3, no. 3, pp. 119-128, 2014.
- [129] L. Knight and S. Theresa A, "Adapting peer review to an online course: An exploratory case study," *Journal of Information Technology Education: Research*, vol. 10, no. 1, pp. 81-100, 2011.
- [130] G. Siemens, "Connectivism: Learning as network-creation," *ASTD Learning News*, vol. 10, no. 1, pp. 1-28, 2005.
- [131] L. Guàrdia, M. Marcelo and S. Albert, "MOOC design principles: A pedagogical approach from the learner's perspective," *eLearning Papers*, vol. 33, 2013.
- [132] S. Bayne and J. Ross, *The Pedagogy of the Massive Open Online Course (MOOC): the UK View*, the Higher Education Academy, 2013.
- [133] P. Orsmond, M. Stephen and R. Kevin, "The importance of marking criteria in the use of peer assessment," *Assessment & Evaluation in Higher Education*, vol. 21, no. 3, pp. 239-250, 1996.
- [134] J. Hamer, M. Kenneth and K. Hugh, "A method of automatic grade calibration in peer assessment," in *In Proceedings of the 7th Australasian Conference on Computing Education*, 2005.
- [135] R. Lu and B. Linda, "A comparison of anonymous versus identifiable e-peer review on college student writing performance and the extent of critical feedback," *Journal of Interactive Online Learning* , vol. 6, no. 2, 2007.
- [136] S. Vinther, N. O. Haagen, R. Jacob, K. Niels and T. V. Shroeder, "Same review quality in open versus blinded peer review," *Ugeskrift for Læger Dan Med* , vol. 59, no. 8, 2012.
- [137] R. Bachelet, Z. Drissa and B. Aline, *Does peer grading work? How to implement and improve it? Comparing instructor and peer assessment in MOOC GdP*, 2015.
- [138] A. Drexler and C. Richard, *The architecture of the Ecole des Beaux-Arts*, Secker and Warburg, 1976.

- [139] B. Lawson, *How designers think: The design process demystified*, Routledge, 2006.
- [140] S. Greenberg, "Embedding a design studio course in a conventional computer science program." In *Creativity and HCI: From experience to design in education*, Springer, 2009, pp. 23-41.
- [141] J. E. Tomayko, "Teaching software development in a studio environment," in *In Proceedings of the Twenty-Second SIGCSE Technical Symposium on Computer Science Education*, 1991.
- [142] L. Bouzidi and A. Jaillet, "Can online peer assessment be trusted? Journal," *Journal of Educational Technology & Society*, vol. 12, no. 4, pp. 257-268, 2009.
- [143] D. Gamage, P. Indika and F. Shantha, "Increasing interactivity and collaborativeness in MOOCs using facilitated groups: A pedagogical solution to meet 21 st century goals.," in *In 2018 IEEE Global Engineering Education Conference (EDUCON)*, Tenerife, Spain, 2018.
- [144] Y. Kotturi, K. Chinmay, B. Michael and S. Klemmer, "Structure and messaging techniques for online peer learning systems that increase stickiness," in *In Proceedings of the Second (2015) ACM Conference on Learning at Scale*, 2015.
- [145] R. Kraut and R. Paul, *Building successful online communities: Evidence-based social design*, MIT Press, 2012.
- [146] R. O'Toole, "Pedagogical strategies and technologies for peer assessment in Massively Open Online Courses (MOOCs)," University of Warwick, Coventry. Retrieved from <http://wrap.warwick.ac.uk/54602>, 2013.
- [147] H. K. Suen, "Peer assessment for massive open online courses (MOOCs)," *The International Review of Research in Open and Distributed Learning*, vol. 15, no. 3, 2014.
- [148] G. L. Taggart, S. J. Phifer, N. Judy A. and Marilyn Wood, *Rubrics: A handbook for construction and use*, R&L Education, 1999.
- [149] C. M. Hicks, P. Vineet, C. A. Fraser and K. Scott, "Framing feedback: Choosing review environment features that support high quality peer assessment," in *In Proceedings of the 2016 CHI Conference on Human Factors in Computing Systems*, 2016.
- [150] K. Raman and J. Thorsten, "Methods for ordinal peer grading," in *In Proceedings of the 20th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining*, 2014.
- [151] J. Jiao, Y. Yuqin, Z. Hongrui and R. Gaimei, "Improving Learning in MOOCs Through Peer Feedback: How Is Learning Improved by Providing and Receiving Feedback?," *Learning and Knowledge Analytics in Open Education Springer*, pp. 69-87.
- [152] S. Downs, "MOOC–Diversity and community in online learning." Keynote presentation delivered to 26e Entretiens Jacques Cartier,, Lyon, France, 2013.
- [153] S. Dhawal, "MOOC Trends in 2016: MOOCs No Longer Massive," Class

Central.

- [154] R. O. ' . Toole, "Pedagogical strategies and technologies for peer assessment," Unpublished discussion paper. University of Warwick, Coventry. , 2013.
- [155] O. Poquet and S. 2. Dawson, "Untangling MOOC learner networks," in *In Proceedings of the Sixth International Conference on Learning Analytics & Knowledge.* , 2016.
- [156] C. Derrick, F. Armando, A. H. Marti and H. Björn, "Should your MOOC forum use a reputation system?.," in *In Proceedings of the 17th ACM Conference on Computer Supported Cooperative Work & Social Computing*, 2014.
- [157] D. R. Garrison, "Communities of inquiry in online learning," in *Encyclopedia of Distance Learning, Second Edition*, IGI Global, 2009, pp. 352-355.
- [158] A. Antonaci, K. Roland, L. Johan, K. Karel and S. Marcus, "Gamification of MOOCs adopting social presence and sense of community to increase user's engagement: an experimental study," in *In European Conference on Technology Enhanced Learning.*, 2019.
- [159] O. Almatrafi and A. Johri, "Systematic review of discussion forums in massive open online courses (MOOCs)," *IEEE Transactions on Learning Technologies*, vol. 12, no. 3, pp. 413-428, 2018.
- [160] M. Wen, M. Keith, D. Steven, D. H. James and R. Carolyn, "Supporting virtual team formation through community-wide deliberation.," *Proceedings of the ACM on Human-Computer Interaction*, vol. 1, pp. 1-19, 2017.
- [161] O. Gary M and O. Judith S, "Distance matters," *Human-computer interaction* , vol. 15, p. 139–178, 2000.
- [162] W. Etienne, "Communities of practice and social learning systems: the career of a concept.," in *In Social Learning Systems and Communities of Practice*, Springer, 2010, p. 179–198.
- [163] W. Etienne, *Communities of practice: Learning, meaning, and identity*, Cambridge university press, 1999.
- [164] R. Williams, J. Stewart and S. Roger, *Social learning in technological innovation: Experimenting with information and communication technologies*, Edward Elgar Publishing, 2005.
- [165] V. Auyeung, "To MOOC or not to MOOC: Issues to consider for would-be MOOC academic leads," *In Higher Education Research Network Journal*, vol. 9, pp. 64-71, 2015.
- [166] H. Fournier and K. Rita, "MOOC learning experience design: Issues and challenges," *International Journal on E-Learning*, vol. 14, no. 3, pp. 289-304., 2015.
- [167] E. Scanlon, M. Patrick and O. Tim, "Learning in the Open: A Research Agenda for MOOCs.," *In Companion of the ACM Conference on Computer Supported Cooperative Work and Social Computing*, pp. 303-306, 2017.
- [168] S. Mak, W. Roy and M. Jenny, "Blogs and forums as communication and learning tools in a MOOC," in *In Proceedings of the 7th International Conference on Networked Learning*, University of Lancaster, 2010.

- [169] P. Koutsakas, S. A. Eleni and K. Charalampos, "Exploring the Role of Facebook as Collaboration Platform in a K-12 MOOC," in *In International Conference on Technology and Innovation in Learning, Teaching and Edu*, 2019.
- [170] D. Coetzee, L. Seongtaek, F. Armando, H. Bjorn and A. H. Marti, "Structuring interactions for large-scale synchronous peer learning," in *In Proceedings of the 18th ACM Conference on Computer Supported Cooperative Work & Social Computing*, 2015.
- [171] R. F. Kizilcec, S. Emily, L. C. Geoffrey and A. M. Daniel, "Encouraging forum participation in online courses with collectivist, individualist and neutral motivational framings," in *EMOOCs Proceedings of the European MOOC stakeholder Summit*, 2014.
- [172] J. Luca and M. Catherine, "Using online forums to support a community of learning," *EdMedia+ Innovate Learning, Association for the Advancement of Computing in Education (AACE)*, 2004., pp. 1468-1474, 2004.
- [173] S. Lim, C. Derrick, H. Bjoern, F. Armando and A. H. Marti, "Initial experiences with small group discussions in MOOCs," in *In Proceedings of the First ACM Conference on Learning at Scale onference*, 2014.
- [174] M. Coral and S. Larry, *Profound improvement: Building capacity for a learning community*, Taylor & Francis, 2011.
- [175] R. Lauren, A. Christa and C. Sherice, *Socializing intelligence through academic talk and dialogue*, American Educational Research Association, 2015.
- [176] C. Doug, "MOOCs and the funnel of participation," in *In Proceedings of the third International Conference on Learning Analytics Knowledge*, 2013.
- [177] G. Mary and M. P. Susan, "The socialization of cognition.," in *Handbook of Socialization: Theory and Research*, 2007, p. 588–613.
- [178] W. Etienne, A. M. Richard and S. William, *Cultivating communities of practice: A guide to managing knowledge*, Harvard Business Press, 2002.
- [179] R. Jim, "Communities of practice: A framework for fostering coherence in virtual learning communities," *Journal of Educational Technology & Society*, vol. 3, no. 3, p. 384–392, 2000.
- [180] L. Jean and W. Etienne, *Situated learning: Legitimate peripheral participation*, Cambridge university press, 1991.
- [181] C. L. Linda, M. G. Jeremy, N. Camilla, J. Maria, C. C. Peter and D. G. Ian, "Evolution of Wenger's concept of community of practice," *Implementation Science*, vol. 4, no. 1, 2009.
- [182] T. Halbana and d. V. Gert Jan, "A facilitation task taxonomy for communities of practice.," in *AMCIS*, 2005.
- [183] W. Etienne, "Myths of Communities of Practice explained.," 2020. [Online]. Available: <https://wenger-trayner.com/introduction-to-communities-of-practice/>. [Accessed 10 June 2020].
- [184] B. Chungil, "Enhancing Learner-Driven Informal Learning in a Virtual Practice Community: The Massive Open Online Course (MOOC) as a

- Learning Solution for Professional Development," in *In Handbook of Research on Digital Content, Mobile Learning, and Technology Integration Models in Teacher Education.*, IGI Global, 2018, p. 207–226.
- [185] N. Matti and V. Arto, "Alumni & tenured participants in MOOCs: Analysis of two years of MOOC discussion channel activity," in *In Proceedings of the Second (2015) ACM Conference on Learning at Scale*, 2015.
- [186] B. Amy, "The future of e-learning communities," *Communications ACM*, vol. 45, no. 4, pp. 60-63, 2002.
- [187] G. Franka, M. Elnaz, M. Christoph, T. Ralf, T. Michael and W. Christian, "openHPI-a Case-Study on the Emergence of two Learning Communities," in *In 2013 IEEE Global Engineering Education Conference (EDUCON)*, 2013.
- [188] G. Charlotte N and J. Z. Frank, "Social presence as a predictor of satisfaction within a computer-mediated conferencing environment," *American Journal of Distance Education*, vol. 11, no. 3, p. 8–26, 1997.
- [189] S. John, W. Ederyn and C. Bruce, *The social psychology of telecommunications.*, John Wiley & Sons, 1976.
- [190] F. Leon, S. Stanley and B. Kurt, *Social pressures in informal groups; a study of human factors*, 1950.
- [191] R. Garrison., "Communities of inquiry in online learning," in *In Encyclopedia of Distance Learning, Second Edition*, IGI Global, 2009.
- [192] Y. L. Simon, G. Joel and Y. Cherng-Jyh, "Community college online course retention and final grade: Predictability of social presence," *Journal of Interactive Online Learning*, vol. 8, no. 2, 2009.
- [193] N. Nicolae, D. Irene, S. Dorin and D. Oliver, "Sense of community in academic communities of practice: predictors and effect," *Higher Education*, vol. 69, no. 2, p. 257–273., 2015.
- [194] K. Jungjoo, K. Yangyi and C. Daeyeon, "Investigating factors that influence social presence and learning outcomes in distance higher education.," *Computers & Education*, vol. 57, no. 2, p. 1512–1520, 2011.
- [195] K. Vitomir, J. Srećko, P. Oleksandra, H. Thieme, Č. Iva, d. V. Pieter, H. Marek, D. Shane, S. George and G. Dragan, "Exploring communities of inquiry in massive open online, courses.," *Computers & Education*, vol. 48, p. 44–58, 2018.
- [196] P. Oleksandra, K. Vitomir, d. V. Pieter, H. Thieme, J. Srećko and G. S. Dragan, "Social presence in massive open online courses," *International Review of Research in Open and Distributed Learning*, vol. 19, no. 3, 2018.
- [197] A. Zehra, A. J Ben, C.-I. Marti, G. Randy, C. R. Jennifer and S. Karen, "A response to the review of the community of inquiry framework.," *Journal of distance education*, vol. 23, no. 2, pp. 135-145, 2009.
- [198] J. Srećko, G. Dragan, K. Vitomir, E. R. Bernhard and H. Marek, "Social in online discussions as a process predictor of academic performance.," *Journal of Computer Assisted Learning*, vol. 31, no. 6, 2015.
- [199] C. S. Damasceno, "Massive Courses Meet Local Communities: An Ethnography of Open Education Learning Circles," PhD Dissertation: North

- Carolina University, North Carolina , 2017.
- [200] L. Min, M. Emily, K. Jina, H. Jason and L. Sa, "Examining the use of Facebook and Twitter as an additional social space in a MOOC," *American Journal of Distance Education* , vol. 30, no. 1, p. 14–26, 2016.
 - [201] W. Etienne, M. Richard and M. S. William, *Cultivating communities of practice: A guide to managing knowledge*, Harvard Business Press, 2002.
 - [202] C. N. Gunawardena, H. Mary Beth, S. Damien, R. Carol, B. Maribeth and T. Rebekah, "A theoretical framework for building online communities of practice with social networking tool," *Educational Media International*, vol. 46, no. 1, pp. 3-16, 2009.
 - [203] W. Etienne, *Harvard business review on organizational learning*, Harvard Business School Press, 2001.
 - [204] S. Sangwan, "Virtual community success: A uses and gratifications perspective," in *In IEEE Proceedings of the 38th Annual Hawaii International Conference on System Sciences*, 2005.
 - [205] Y. Sun, F. Yulin and H. L. Kai, "Understanding sustained participation in transactional virtual communities," *Decision Support Systems*, vol. 53, no. 1, pp. 12-22, 2012.
 - [206] S. Bradbury and M. Lucie, "The role of learning in sustainable communities of practice.," *Local Environment*, vol. 20, no. 7, pp. 796-810, 2015.
 - [207] K. Handley, S. Andrew, F. Robin and C. Timothy, "Within and beyond communities of practice: Making sense of learning through participation, identity and practice," *Journal of Management Studies* , vol. 43, no. 3, pp. 641-653, 2006.
 - [208] R. Markus, S. Gunnar, B. Peter and W. Volker, "Towards a paradigmatic shift in IS: designing for for social practice," in *In Proceedings of the 4th International Conference on Design Science Research in Information Systems and Technology.*, 2009.
 - [209] V. Wulf and R. Markus, "Towards an integrated organization and technology development." In *Proceedings of the 1st conference on Designing interactive systems: processes, practices, methods, & techniques*, in *1st conference on Designing Interactive Systems: Processes, Practices, Methods, & Techniques*, 1995.
 - [210] V. Wulf, R. Markus, P. Volkmar and S. Gunnar, "Engaging with practices: design case studies as a research framework in CSCW," in *" In Proceedings of the ACM 2011 Conference on Computer Supported Cooperative Work*, 2011.
 - [211] C. M. Hoadley and G. K. Peter, "Using technology to transform communities of practice into knowledge-building communities," *ACM SIGGroup Bulletin* , vol. 25, no. 1, pp. 31-40, 2005.
 - [212] T. Staubitz and M. Christoph, "Collaboration and teamwork on a mooc platform: A toolset.," in *In Proceedings of the Fourth (2017) ACM Conference on Learning at Scale*, 2017.
 - [213] D. W. Shaffer, H. David, N. S. Gina, N. Padraig, N. Aran, B. Elizabeth, F. Ken, A. A. Rupp and M. Robert, "Epistemic network analysis: A prototype

- for 21st century assessment of learning," *International Journal of Learning and Media* , vol. 1, 2009.
- [214] E. Wenger, T. Beverly and D. L. Maarten, "Promoting and assessing value creation in communities and networks: A conceptual framework," *The Netherlands: Ruud de Moor Centrum* , vol. 20, pp. 2010-2011, 2011.
- [215] N. Matti and V. Arto, "Alumni & tenured participants in MOOCs: Analysis of two years of MOOC discussion channel activity," in *In Proceedings of the Second (2015) ACM Conference on Learning at Scale*. 85–93, 2015.
- [216] N. Law and L. Leming, "Sociotechnical co-evolution of an e-Learning innovation network," *British Journal of Educational Technol*, vol. 50, no. 3, pp. 1340-1353, 2019.
- [217] L. Chee-Kit and T. Laik Woon, *Scaling educational innovations*, Springer, 2015.
- [218] W. Yuan and B. Ryan, "Content or platform: Why do students complete MOOCs," *MERLOT Journal of Online Learning and Teaching* , vol. 11, no. 3, pp. 17-30, 2015.
- [219] S. Afsaneh and M. Barry, "Discussion forums in MOOCs," *International Journal of Learning, Teaching and Educational Research* , vol. 12, no. 1, 2015.
- [220] C. Matt, "From instructivism to connectivism: theoretical underpinnings of MOOCs," *Current Issues in Emerging eLearning*, vol. 3, no. 1, p. 6, 2016.
- [221] W. Duncan J, "Networks, dynamics, and the small-world phenomenon," *American Journal of Sociology* , vol. 105, no. 2, 1999 .
- [222] L. Steve, "Remember the MOOCs? After Near-Death, They're Booming," *New York Times*, 2020.
- [223] M. Ebner and S. Sandra, "Remote Future Teacher Training with MOOCs. In Teaching, Technology, and Teacher Education during the COVID-19 Pandemic: Stories from the Field, pp..," *Association for the Advancement of Computing in Education*, pp. 493-497, 2020.
- [224] K. Charmaz and L. B. Linda, "Rethinking Methods in Psychology," in *Grounded Theory*, Wiley Online Library, 2007, pp. 27-49.