

Employability Skills Development Through Collaborative Learning in Business Math: An Onward Journey

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Abstract

This paper reflects upon the journey of the author in facilitating collaborative teaching and learning practices for developing employability skills in General Education Mathematics courses at the undergraduate level. The paper discusses similar experiences of STEM faculty members who have experimented with collaborative learning and teaching for enhancing student experience. The research also discusses how specific employability skills can be developed during various stages of the collaborative teaching and learning model designed for the purpose of the study. Team formation and work in teams are discussed in detail. Finally, the paper concludes with the possibilities of future SoTL research for employability purposes.

Keywords

business math; COVID-19; employability skills; transferable skills; higher education; NACE; collaborative learning; faculty reflection; STEM

Introduction

Econ 156 at Bloomsburg University of Pennsylvania is a mandatory General Education course for business, economics, accounting, and finance majors. Econ 156 introduces basic mathematical tools frequently employed in business and economics for designing, evaluating, and solving quantitative problems. The course targets a broad-based audience that also includes freshman students. This paper discusses how students at the postsecondary level can develop “employability skills” through collaborative learning in a General Education mathematics course. Additionally, the paper critically reflects on the instructor’s experience and compares with similar faculty experiences in a variety of courses/disciplines.

The paper has been structured into the following sections: Section 1 is an introduction to the idea of collaborative learning in teams; Section 2 is a description of a collaborative learning model applied in this study; Section 3 discusses team formation by students applying self-selection method (Weimer, 2021); Section 4 examines the significant role of teams in developing employability skills using team presentations; Section 5 concludes the paper by discussing application of the collaborative model of learning to build employability skills in other disciplines as well as business courses. Limitations of the present study and directions of future scope of work are discussed.

Collaborative Learning in Teams

Active learning requires students to cognitively engage with learning materials and activities specifically designed by the teacher (Bonwell & Eison, 1991). Davidson and Katopodis (2022) have concluded that active learning is more effective than traditional lecture-based discourse delivery. Apart from several positive impacts of active learning highlighted by the authors, one that faculty need to remember is that students should be able to apply learning beyond the classroom. Active learning also helps to build higher-order thinking skills that are essential in professional and adult life: “proficiencies in collaboration, project management, synthesis and generalization from examples, and so on. Employers insist these are the prized skills they seek in new employees” (Davidson & Katopodis, 2022).

“Collaborative learning” is an example of active learning that usually occurs in teams involving more than two students. The learning must be intentional through thoughtfully created activities or discussions or delivery of a final project. Every student in the group must be engaged in equal measure to contribute towards the final product. The tasks each student receives will depend on the person’s role in the project and will include a variety of activities. The end goal of collaborative learning is to successfully achieve learning objectives of the course. Research has also shown that students learn from one another through interactions. Since it is a form of active learning, students perform better when they work together and interact with each other. This paper reflects on the process of creating team presentations (as a form of collaborative learning) and how such collaborative learning in teams can provide opportunities to develop employability skills that are valued by employers.

I had the opportunity to develop and implement career progression and training programs during 2004–2014 in the Kingdom of Bahrain. A decade of such experience prepared me to understand and design entry-level graduate training programs, middle- or manager-level continuing education programs, and finally the executive leadership programs for the C-suite of employees. Moving back to academia, since 2014, I became increasingly aware of the need to train postsecondary students to help them become more career ready. It became apparent that graduates need to be well prepared for a fast-changing world of jobs with the onset of the Fifth Industrial revolution powered by artificial intelligence (AI). Businesses today search for employees who are team players, adaptable, collaborative, persuasive, communicative, and have leadership skills (World Economic Forum, 2021). Chan et al. (2014) noted that one of the main aims of postsecondary education is to equip students with the vocational and professional skills needed to make them ready for the future job market. Embedding transferable skills in courses can lead to significant transformation in career readiness levels for postsecondary students.

Collaborative Learning Model

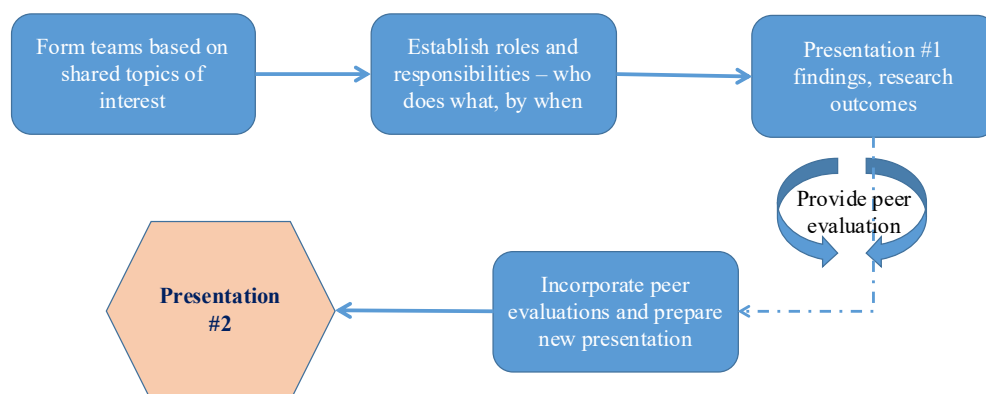
“Collaborative learning” is an umbrella term for a variety of learning approaches involving joint intellectual effort by both students and teachers. Usually, students work in groups of two or more, exploring solutions or meanings, and creating a project, paper, or presentation. In the past, traditional education has been dominated by instructor-led lectures or activities with minimal or passive student participation. This is especially true of teaching and learning in mathematics, where students have been conditioned to work individually for problem-solving. However, in the business world, it is rare that employees are asked to work in isolation. Teamwork and coordination are at the heart of most businesses, where technology-driven tools are used by teams across locations to work in remote, virtual teams. Employers seek those who

can exhibit team performance and work with peers collaboratively to successfully complete projects. This is even more critical now and for future jobs, driven by the Fifth IR, when artificial intelligence can replace repetitive activities. To succeed in future jobs, students are expected to undergo skills-based learning (World Economic Forum, 2021). This paper attempts to consider math teaching and learning in a collaborative setting with opportunities to build employability skills among college students. The collaborative learning model identified in Figure 1 has several steps. In step 1 of the model, teams are formed by students themselves around a common mutual interest. Step 2 involves defining roles and responsibilities of team members for the team presentation. Step 3 is the process of presentation preparation using real-world situations, creativity, and application of the math learned in class based on guidelines provided by the instructor. Step 4 involves team presentations and peer evaluations based on a rubric provided by the instructor. Step 5 could be the second round of revised or final presentations after incorporating peer evaluation feedback from the first round of presentations. This paper discusses Steps 1, 2, 3, and 4.

Figure 1

Collaborative Learning Model for Business Math

Collaborative Learning Model



Team Formation

The role of a community (Darby & Lang, 2019) in a classroom (F2F/face-to-face or virtual) can go a long way in fostering learning as well as developing employability skills among students.

It is not always easy to have students create teams and work collaboratively. This is especially true in a post-COVID-19 world, where freshman students joined college after almost two years of home-based virtual learning. Most schools have not been adequately equipped to handle the unprecedented technological challenges of virtual learning during COVID. In the absence of a community based on collegial interactions in classrooms during the pandemic, college students were left isolated in a remote learning environment with detrimental impacts on mental health.

During post-COVID times, it seemed imperative to create communities where students can learn collaboratively during the semester using team presentations as a form of course assessment. Additionally, students needed to feel safe in their new environment, both in

classrooms and outside, after almost two years of the isolated learning experience. In this course (Econ 156), students were allowed to select teams where they would feel safe to interact. Sophomore students, who joined college campus in 2021, were just like freshman students with no prior college campus experience. Weimer (2021) mentioned that allowing students to self-select themselves in teams based on common interest in a topic is an optimum way to create effective teams. Students embraced the idea of introducing themselves to each other in the class via the university's online learning platform in both online synchronous and F2F modalities of classes. They selected team members based on common areas of mutual interest in business or areas of their majors.

Fry et al. (2021) mention that the main idea of creating this learning experience using teams is to encourage students to apply their learning in an actionable real-world project using various methods or means of expression (a letter, a report, a film). In either case, self-interest and ownership of the assignment and a feeling of common interest inspire students to self-select themselves in teams. Team-Based Learning (TBL) applied by Awosoga et al. (2020) in completely different disciplines (anthropology and statistics) brings out similar outcomes of engagement, success, accountability, and innovation in student learning. Cruz et al. (2022) note how students participating in study abroad gain experiential learning and feel humbled by others' perspectives. Students respond candidly when talking about their own interests. This demonstrates the fact that when learning is tied to one's interests, it can be motivating and meaningful, more so when learning is applicable for long-term goals such as one's future career.

Most math and STEM students, more often than not, work alone and some finally decide that they are not suitable for doing math. "Math is not my thing" or "I don't think I am a math person" are some comments I come across often in my General Education math course. Traditionally, math teaching and learning in elementary and secondary school education have remained a non-group activity-based discipline. The feeling of a continuous and lonely struggle can lead students to give up or resign themselves to failure. This has led to discussion around growth vs. fixed mindset (Dweck, 2006), which is not the focus of this paper. Hence it was no surprise to me when my General Education math students admitted that they found it unusual in this course, at the beginning, to learn math in a team. Later in the course they admitted that there were some significant advantages to sharing challenges and experiences of solving problems together. The sense of a "team" problem and not a "math" problem helps students realize that the learning journey can be made less lonely or intimidating when team members discuss problems together or find solutions in multiple ways. Further, working in a team challenged their earlier conviction that math problems had to be solved in a unique manner with unique solutions (Guberman & Leikin, 2013). Working in teams helps students realize the importance of Multi-Solution Tasks (MSTs) in a problem-solving context in math and subsequently in business.

Team Presentations and Skills Development

Using the example of Econ 156 in this paper, I demonstrate teamwork through community building in my virtual synchronous and F2F course. Here, students work in teams during the semester and, using scaffolding techniques, they create team presentations that are unique to their individual interest or field of study. Skills development takes place when students prepare the final presentation and demonstrate the application of mathematical tools, they have learned in class for solving real-world business problems.

In Econ 156, students are encouraged to take away at least one idea (if not more) at the completion of my General Education math course. This idea is about which math tool/s can be applied to the real world of business. My aim has been to include development of career readiness skills by creating a social and emotional learning space for students using a safe environment in teams. Table 2a describes the 21st century transferable skills and their definition by National Association of Colleges and Employers (NACE). Table 2b shows the possibilities of how similar skills, as prescribed by the World Economic Forum, can be developed when students work collaboratively in teams they have chosen.

Table 2a

21st Century Skills as Identified and Defined by NACE (National Association of Colleges and Employers, 2021)

Transferable Skills/Employability Skills or Core Competencies Assessed Using PBL	Defined by NACE
Career & Self-Development	Proactively develop oneself and one's career through continual personal and professional learning, awareness of one's strengths and weaknesses, navigation of career opportunities, and networking to build relationships within and without one's organization.
Oral and Written Communication	Clearly and effectively exchange information, ideas, facts, and perspectives with persons inside and outside of an organization.
Critical thinking	Identify and respond to needs based upon an understanding of situational context and logical analysis of relevant information
Equity and Inclusion	Demonstrate the awareness, attitude, knowledge, and skills required to equitably engage and include people from different local and global cultures. Engage in anti-racist practices that actively challenge the systems, structures, and policies of racism.
Professionalism	Knowing work environments differ greatly, understand, and demonstrate effective work habits, and act in the interest of the larger community and workplace.
Leadership	Recognize and capitalize on personal and team strengths to achieve organizational goals
Teamwork	Build and maintain collaborative relationships to work effectively toward common goals, while appreciating diverse viewpoints and shared responsibilities
Technology	Understand and leverage technologies ethically to enhance efficiencies, complete tasks, and accomplish goals

Source: naceweb.org/career-readiness-competencies ©2021 National Association of Colleges and Employers

Table 2b*WEF 21st Century Skills Development in Classrooms*

Skills	How to Develop Inside Classroom Using Team Presentation Format of Collaborative Learning
Critical Thinking	Analysis of business problems and their solutions. Peer evaluation of the team presentation and project
Creativity	Structure of project and presentation with room for autonomy depending on students' interests and skills
Communication	Teams present verbally and in writing and work with one another remotely and in person
Collaboration	Teams where students get the chance to work with others to create team presentation in groups
Curiosity/lifelong learning	HE BIG IDEA: How to Apply learning of Math to real world business situations.
Initiative	Project continued throughout the term to give opportunities to improve performance by team members individually and the team
Persistence	Opportunities to learn from mistakes in team presentation preparation
Adaptability	Include flexibility in presentation project with structure. This includes creation of audio- visual impacts on the presentation slides
Leadership	Foster negotiation, coordination and empathy among team members to complete the project
Social and Cultural Awareness	Respect for one another in a group and foster empathy for team members. Also become aware of real world business issues across the globe.

Source: World Economic Forum. (2020). The Future of Jobs Report.

<https://www.weforum.org/reports/the-future-of-jobs-report-2020>

How Can Collaborative Learning Be Used to Build Employability Skills in a General Education Math Course for Business Through Team Presentations?

Most students planning to major in economics, finance, accounting, management, and business studies at Bloomsburg University enroll in Econ 156 as the foundational math course. Yackel and Rasmussen (2002) mentioned that in their differential equation class, students came to the course believing that the teaching should be unidirectional—instructed by the teacher and

complied with by the students. The general attitude at the outset was that problems should be solved solely based on directions provided by the teacher. There was little room for analysis of the solution trajectory or exploring different approaches to problem-solving. Students held no expectations that they needed to discuss their solutions among themselves. They did not interpret meanings of solutions or analyze the nature of the different solutions they arrived at.

The process of transforming this mindset included a semester-long experiment of working through practical problems and real-world applications of differential equations. Moreover, students maintained a self-reflective journal that illustrated their evolving perception of how math can be taught and learned. Teaching was conducted using real-life applications through student-centric discussions, collaborative problem-solving, and questioning the validity of potential solutions.

In a collaborative learning environment, direct teaching takes a back seat, and the teacher assumes the role of a facilitator who supports learning driven by students themselves (Smith & MacGregor, 1993). As Golub points out, “Collaborative learning has as its main feature a structure that allows for student talk: students are supposed to talk with each other ... and it is in this talking that much of the learning occurs” (Golub, 1988). This also helps in learning the art of communication in a professional setting and is a step forward towards career readiness for students. Communication is identified as a 21st century skill that students should develop.

Apart from building partnership between students and faculty, collaborative learning also builds partnerships between students themselves which leads to the social awareness for working in teams. Collaborative learning leads students to build teams and resolve differences, arrange meetings, create outcomes, support one another, develop greater empathy—which help in developing professional skills for the 21st century as identified in Tables 2a and 2b (Professionalism, Teamwork, Technology, Leadership, Oral and Written Communication—to mention a few). When students engage themselves in such activities in a classroom environment, specific transferable skills are formed which are also called employability skills.

Michaelsen et al. (2004, p. 7) mention that in order to use team-based learning, a course needs to fulfil two conditions:

“The course contains a significant body of information and ideas (i.e., the content) that students need to understand, and

One of the primary goals for the course is for students to learn how to apply or use this content by solving problems, answering questions, resolving issues, etc.”

Collaborative learning using teams should include a continuous stream of activities (Michaelsen et al., 2004) rather than a one-time occurrence. It should evolve from a small and simple activity to more complex ones during the semester, culminating in a team project or exam or presentation as in Econ 156. In Econ 156, students work collaboratively in teams throughout the semester on various team-based assessments and activities such as in-class assignments, quizzes, and homework which culminate in preparation and delivery of a team presentation.

Transferable skills are those which can be easily applied to different real-life situations (including at the workplace) and hence are not subject or course specific in nature. Basic transferable skills are restricted to literacy, numeracy, and ICT (information and communication technology) skills (Miller et al., 2013). These could also be described as

generic skills, e.g. literacy, leadership, problem-solving, influencing, teamwork, planning, numeracy skills, and emotional labor skills (Ramos et al., 2013), communication, time management skills (Teo et al., 2012), lifelong learning skills, technical training skills, oral, written and interpersonal skills, or skills to handle the huge amount of information available under information technology (Keneley & Jackling, 2011). Employability skills refer to skills such as communication (preferably in more than one language), mathematical and technological competence, digital competence, learning to learn, social and civic competencies, sense of initiative and of entrepreneurship as well as cultural awareness and expression (Recommendation of the European Parliament, 2006). Employees with higher transferable skills are valued highly by employers (Fugate et al., 2004).

Berry et al. (1995) have demonstrated the usefulness of using posters in math course to develop communication skills, peer evaluation, student involvement in assessment, etc. Kågesten and Engelbrecht (2007) allowed for peer-to-peer learning in an undergraduate program in engineering, where students presented in groups to other students to teach problem-solving and background of theoretical math.

Zain et al. (2012) have pointed out the improvement of math learning among students through use of Student-Centered Learning (SCL) techniques among pre-university students through cooperation, interaction, and active engagement.

Clear instructions, shared at the beginning of the semester, provided guidelines with built-in flexibility of problem choice, design, creation, and presentation and led teams to understand and execute the presentation. Each team chose a topic based on their mutual interest in a product or company. Their task was to clearly articulate the problems they saw and their proposed solutions.

The transparency in the design of the team presentation is a very important step towards successful skills development through student led collaborative model of team presentations (Winkelmes et al., 2019). The TILT (Transparency in Learning and Teaching) framework provides a strong case for detailed structure of the assignment to be made available for the students as clear guidelines (Winkelmes et al., 2019). Professionals I engaged with in training during 2004–2014 were aware of their dos and don'ts in a collaborative project. On the other hand, most of the students in the Econ 156 or Foundation Math course were freshmen with little or no prior experience of collaborative learning via presentations and, that too, in math. However, I realized, through use of the TILT framework, the need for a detailed step-by-step guide for students that should accompany the instructions for creating and finally presenting the team project. I created detailed guidelines as a template for presentation at the beginning of each semester. Students were encouraged to enhance the template using creativity and technology skills. This led to a clear improvement in presentation by students. Further, samples of past student submissions have been provided to current students as examples.

Econ 156 is structured as a collaborative and student-centric course, focusing more on hands-on activities rather than lectures. In math courses such as Econ 156 students initially expect the course to follow the traditional trajectory of teacher-driven learning and as a result, I faced initial challenges using collaborative techniques and presentations. Students start to learn, a few weeks into the course, that math can be applied to solve real-world problems. Moreover, students can work together and learn from each other. They realize through collaboration that there is more than one way to solve problems. Most students are then able to appreciate collaboration as well as real-world applications of math tools they learn during the course. Learning throughout the semester culminates in the final team presentation and helps them to

understand the relevance of mathematical concepts in business, finance and economics. As mentioned by Yackel and Rasmussen (2002), students need to be convinced about the role of student and faculty member in class in a collaborative team-based learning environment. They should also be made aware of the importance of creating and presenting unique problems and solutions for business and economics applying math. Transferability skills are developed by using a mix of collaborative work in teams towards solving real-world business problems. This collaborative model of teaching and learning is flexible and can be adapted to several disciplines.

In Econ 156, students were asked to form teams and work on a particular product or firm of choice. For the team presentation to be presented to the entire class, each team member had to play an active role. Additionally, a team leader, who would be selected by all teammates of a particular team, would be responsible for coordinating activities of the members after assigning individual tasks to self and others. This leads to the opportunity for leadership skills development by each student leader. All team members would be communicating with one another remotely or F2F (as they deemed fit) on a regular basis to complete the end-of-term presentation. In most cases students interact remotely due to ease of access using technology.

Collaboration among members of a team leads to the development of better communication skills—both verbal and written; improves time management for attending and scheduling meetings, technology skills for using remote technology to collaborate (e.g., Zoom meetings, working with PowerPoint slides, etc.), and finally presentation skills. Meetings and working with peers in a team lead to interpersonal skills development, problem-solving skills, and project management skills. These transferable or employability skills are key in any workplace. Embedding these exercises in the curriculum to help develop these skills is not only helpful to students but is also welcomed by employers. Michaelsen et al. (2004) mention that group or team presentation has both positive and negative outcomes, yet it is one of the most effective ways to make students work together. Michaelsen et al. (2004) also mention that preparation of the presentations develops interpersonal skills and learning skills of students. In my earlier role in training and professional development of financial sector employees in Bahrain, I found that team building, teamwork, and communication in teams have been some of the skills high in demand by employers. These transferable skills are equally, if not more, appropriate in the 2020s when technological disruption and automation need human factors to be stronger at the workplace than ever before.

Free-riding issues in teams can be avoided through teams identifying structured roles and responsibilities for each member of the team. This leads members to develop ownership and accountability in the project. A team contract has been used by Pertegal-Felices et al. (2019) in a class of engineering students in response to employer needs to reduce conflicts in teams. The contract set down rules of the teams as well as job responsibilities. The results of the contract were positive in terms of communication, motivation, and student satisfaction. Aranda et al. (1998) noted that detailed team contracts can help in evaluating the progress of teams throughout the collaboration. Free-riding problems have been an issue in a small number of cases during 2018–2023 in my General Education math course. However, some best practices I have used have helped in this regard to improve issues of free riding over the years. Team members were not allowed to change teams or roles at any time during the semester. In rare instances of intrateam conflict, one-to-one meetings were held with members of teams, and conflicts were resolved since signed contracts reflected the roles and responsibilities of all members of the team. Hence in this collaborative learning and teaching model, team member responsibilities and accountability are key to the success of the project.

Weaver et al. (1986) demonstrated through action research that students benefitted in their research projects when they were provided with peer feedback. Panadero et al. (2019) discussed that anonymity in peer assessment under certain conditions was helpful in student learning. In this study, team presentations in Econ 156 are graded using peer evaluations, which lead to the development of other transferable skills like critical thinking. It is common practice to receive peer feedback in jobs in business. Hence, I withdrew from my role as the evaluator of the team projects and allowed teams to be evaluated by peers. Students are reminded that their performance in future jobs will be evaluated by their stakeholders against industry benchmarks. It will be more likely that such evaluation will be based on team performance and not just individual performance. This could be a good starting point for students to prepare themselves to face critical comments in the future workplace. Anonymous peer evaluations help students to learn to provide objective feedback, review each other's work, and receive critical feedback to improve. Brutus et al. (2013) showed that repeated exposures to peer evaluation process enhanced student peer evaluation feedback quality. Students became more confident in the process and developed critical thinking and communication skills during the feedback process.

Conclusion: Drawbacks of the Model and Future Work

This paper discussed how implementation of collaborative learning using team presentations in a Foundation Mathematics course for Business and Economics (Econ 156) at Bloomsburg University creates opportunities for employability skills development. By the end of the semester, students with a common interest and goal have a better understanding of how to navigate and work collaboratively in a team. This opportunity helps students to develop transferable or employability skills (see Table 2a and Table 2b) and to apply math to solve real-world business problems.

However, building employability skills needs to be coordinated across the curriculum/program to reap maximum benefits for preparing graduating students and impacting career readiness. The process of collaborative learning using team presentation has several stages, and all processes are by no means complete in this research. The development of team contracts, the process of peer evaluation, building more efficient teams, and finally evaluation of skills development are examples of the many aspects of this model that need to be further developed over time. Research in areas of team formation, presentation preparation using skills, evidence of skills development for the job market, peer evaluation, second round of presentations after peer feedback, performance of the students in the jobs after they graduate or as an intern before graduation will help evaluate the nature and extent of employability skills development through team presentations. This research can have far-reaching consequences for the direction of student-centered learning and teaching with the aim of preparing students with employability skills for the future job market.

References

- Aranda, E. K., Aranda, L., & Conlon, K. (1998). *Teams: Structuring process, culture, and politics*. Prentice Hall, Inc.
- Awosoga, O., Meadows, J., & Newberry, J. (2020). Trying team-based learning in two classrooms: What can an anthropologist learn from a statistician and vice versa? *Transformative Dialogues: Teaching and Learning Journal*, 13(1), 34.
- Berry, J., & Houston, K. (1995). Students using posters as a means of communication and assessment. *Educational Studies in Mathematics*, 29, 21–27.
- Bonwell, C. C., & Eison, J. A. (1991). *Active learning: Creating excitement in the classroom*. ASHE-ERIC Higher Education Report. School of Education and Human Development, George Washington University.
- Brutus, S., Donia, M. B., & Ronen, S. (2013). Can business students learn to evaluate better? Evidence from repeated exposure to a peer-evaluation system. *Academy of Management Learning & Education*, 12(1), 18–31.
- Chan, R., Brown, G. T., & Ludlow, L. (2014, April). *What is the purpose of higher education? A comparison of institutional and student perspectives on the goals and purposes of completing a bachelor's degree in the 21st century*. American Education Research Association (AERA) conference. Philadelphia, PA.
- Cruz, L., Brua, C., Grodziak, E., & Kelley, J. (2022). Editors' introduction: Learning as a wicked problem. *Transformative Dialogues: Teaching and Learning Journal*, 15(1).
- Darby, F., & Lang, J. M. (2019). *Small teaching online: Applying learning science in online classes*. Jossey-Bass.
- Davidson, C. N., & Katopodis, C. (2022, July 20). *10 arguments for inciting learning*. Inside Higher Ed. <https://www.insidehighered.com/advice/2022/07/20/why-active-learning-more-effective-traditional-modes-opinion>
- Dweck, C. S. (2006). *Mindset: The new psychology of success*. Random House.
- Fry, S. W., Gayle, H., & Witt, H. (2021). Refining pedagogy to support student learning in a general education course: Action plans for social change. *Transformative Dialogues: Teaching and Learning Journal*, 14(3).
- Fugate, M., Kinicki, A. J., & Ashforth, B. E. (2004). Employability: A psycho-social construct, its dimensions, and applications. *Journal of Vocational Behavior*, 65, 14–38.
- Golub, J. (Ed.). (1988). *Focus on collaborative learning*. National Council of Teachers of English.
- Guberman, R., & Leikin, R. (2013). Interesting and difficult mathematical problems: Changing teachers' views by employing multiple-solution tasks. *Journal of Mathematics Teacher Education*, 16, 33–56.
- Kågesten, O., & Engelbrecht, J. (2007). Student group presentations: A learning instrument in undergraduate mathematics for engineering students. *European Journal of Engineering Education*, 32(3), 303–314. doi: 10.1080/03043790701276833
- Keneley, M., & Jackling, B. (2011). The acquisition of generic skills of culturally diverse student cohorts. *Accounting Education*, 20(6), 605–623. <https://doi.org/10.1080/09639284.2011.611344>
- Michaelsen, L. K., Knight, A. B., & Fink, L. D. (2004). *Team-Based Learning: A transformative use of small groups in college teaching*. Stylus Publishing.
- Miller, L., Biggart, A., & Newton, B. (2013). Basic and employability skills. *International Journal of Training and Development*, 17(3), 173–175.
- NACE (2021). naceweb.org/career-readiness-competencies ©2021 National Association of Colleges and Employers

- Panadero, E., & Alqassab, M. (2019). An empirical review of anonymity effects in peer assessment, peer feedback, peer review, peer evaluation and peer grading. *Assessment & Evaluation in Higher Education*, 44(8), 1207–1223. doi: 10.1080/02602938.2019.1577081.
- Pertegal-Felices, M. L., Fuster-Guilló, A., Rico-Soliveres, M. L., Azorín-López, J., & Jimeno-Morenilla, A. (2019). Practical method of improving the teamwork of engineering students using team contracts to minimize conflict situations. *IEEE Access*, 7, 65083–65092. doi: 10.1109/ACCESS.2019.2916343.
- Ramos, C. R., Ng, M. C. M., Sung, J., & Loke, F. (2013). Wages and skills utilization: Effect of broad skills and generic skills on wages in Singapore. *International Journal of Training and Development*, 17(2), 116–134.
- Recommendation of the European Parliament and of the Council of 18 December 2006 on key competences for lifelong learning. (2006). *Official Journal of the European Union*, L 394, 310–318.
- Smith, B. L., & Macgregor, T. J. (1993). *What is collaborative learning?* Washington Center for Improving the Quality of Undergraduate Education.
- Teo, S. T. T., Segal, N., Morgan, A. C., Kandlbinder, P., Wang, K. Y., & Hingorani, A. (2012). Generic skills development and satisfaction with groupwork among business students. *Education and Training*, 54(6), 472–487.
- Weaver, R. L., & Cotrell, H. W. (1986). Peer evaluation: A case study. *Innovative Higher Education*, 11, 25–39.
- Weimer, M. (2021). Exploring how students select group members. *The Teaching Professor*. Retrieved from <https://www.teachingprofessor.com>.
- Winkelmes, M.-A., Boye, A., & Tapp, S. (Eds.). (2019). *Transparent design in higher education teaching and leadership: A guide to implementing the transparency framework institution-wide to improve learning and retention*. Stylus Publishing LLC.
- World Economic Forum. (2020). *The future of jobs report*. <https://www.weforum.org/reports/the-future-of-jobs-report-2020>
- World Economic Forum. (2021). *Ten 21st-century skills every student needs*. <https://www.weforum.org/agenda/2016/03/21st-century-skills-future-jobs-students/>
- Yackel, E., & Rasmussen, C. (2002). Beliefs and norms in the mathematics classroom. In G. C. Leder, E. Pehkonen, & G. Törner (Eds.), *Beliefs: A hidden variable in mathematics education?* (pp. 225–244). Mathematics Education Library, vol 31. Springer. https://doi.org/10.1007/0-306-47958-3_18
- Zain, S. F. H. S., Rasidi, F. E. M., & Abidin, I. I. Z. (2012). Student-centred learning in mathematics constructivism in the classroom. *Journal of International Education Research (JIER)*, 8(4), 319–328.