International Association for the Study of Cooperation in Education
IASCE

IASCE Newsletter Volume 38 Number 3 December 2019

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Dear Colleagues,

It is a pleasure to bring you the third IASCE newsletter of 2019. This will be our last "regular" newsletter. As you know from the opening letter in our September issue, IASCE has announced that it is dissolving its non-profit incorporation this month—December 2019. The IASCE website will remain in place during 2020 and JASCE has graciously offered to post and provide continuing access to the IASCE newsletters after that time.

In late Spring 2020 we will publish a final commemorative edition of the IASCE newsletter. We urge you to contribute. **The deadline is 31 January 2020.** Please see details from our Newsletter Editor, Jill Clark, later in this issue.

For this newsletter, Jill and Yael have chosen abstracts from many countries including (among others): China, Columbia, Cyprus, Ecuador, Ethiopia, Germany, Indonesia, Iran, Malaysia, New Zealand, Norway, Philippines, Spain, Taiwan, United States, Vietnam, and Zambia. Not surprisingly, several researchers are examining how students from their countries/cultures interact and how cooperative learning models and practice might need to be modified for their own contexts. The remarkable spread and diversity of countries represented by these abstracts adds to my confidence that research into, and use of, cooperative learning will continue to expand and flourish.

In this issue, we have included reports of conferences in Japan, Netherlands, and South Africa, plus a report from Latvia. JASCE and IAIE are among IASCE's cherished friends. JASCE invited us to work with them in Nagoya in 2008 and, without their vision and support, IASCE would not have been able to travel to Taiwan for the 2019 conference. JASCE is a powerful example of how a national organization can build a strong presence and do remarkable work within their region. Their model of an annual national conference, plus regularly scheduled regional meetings and tiered support for staff development in cooperative learning, is one that is based on sound research, has been very successful, and could be adapted elsewhere.

IAIE has been, as Yael describes, a long-term partner. In 2008, we co-sponsored a conference with IAIE in Torino and, since then, have provided support for cooperative learning strands at multiple IAIE conferences in Europe—including the November conference in Amsterdam. During the Amsterdam conference, IASCE reconnected with Indra Odina from Latvia and she and her colleagues have written a fascinating article about cooperative learning in Latvia. We first met Indra and Ilze at the IASCE conference in Manchester in 2002. We saw them again in Torino in 2008. In this article, I was particularly interested in their international work focused on developing methodology for creating and asking questions related to multilingual education. The four areas and nine themes they outline can provide meaningful points for reflection and action for many of us as does their commitment to sustainability at multiple levels.

The Latvian story is, in many ways, quite different from the JASCE model. However there are also important similarities. Each group is focused, primarily, in its "home" country but also reaches out to share expertise with other countries. Each group has a long-term vision but is also committed to flexibility and responding to circumstances and needs.

LETTER FROM THE CO-PRESIDENT

Each group benefits from a core group of committed professionals who share a long history in their organizations.

The Self Directed Learning Group at North-West University in South Africa is an example of another vibrant group of professionals committed to improving educational outcomes. Their commitment to cooperation—at many levels—is abundantly clear while, simultaneously, they are focused on self-directed learning research and practice. Their dual foci, and the multiple foci of organizations such as IAIE and LAPSA, are reasons to reflect on the deep roots of cooperative learning and to celebrate its power and universality.

Considered together, JASCE, IAIE, LAPSA (LACE), and SDL are four examples of organizations, spanning three continents, which are committed to improving the life chances of children, youth, families, and communities. As we move forward to dissolve the IASCE incorporation, each one of these groups, and many others, can serve as valuable models for those who wish to develop new networks to connect and serve their own regions.

As 2019 comes to a close, and we are in the midst of a season of celebration and reflection, I would like to thank all of you for the work you do and to encourage each of you to reach out to a friend or colleague to thank them for their work and support. If you have not considered doing so before, perhaps now is a good time to create a small network of professionals and community members committed to fostering cooperation, sustainability, and generosity. The IASCE website—which includes hundreds of article abstracts in recent newsletters and the conference programs from the 2012, 2015, and 2019 conferences with contact information for presenters—could also be a valuable resource.

Cooperatively yours,

A Cooperative Learning Experience in South Africa

Lynda Baloche

During the Odense Denmark conference in 2015, I met briefly with Elsa Mentz from North-West University in Potchefstroom South Africa. She told me about the Research Focus Area—Self Directed Learning (SDL) at North-West University (see http://education.nwu.ac.za/self-directed-learning/home). In November 2019, following an invitation from Professor Mentz and the Self-Directed Learning Focus Area group at North-West University, I had the opportunity to travel to South Africa to share work about cooperative learning at three related venues.

My adventure began with a long flight delay from Atlanta to Johannesburg. When we finally boarded, it was obvious that the plane was dirty. The man next to me and I shared resources to clean our seats and tray tables even before we took off. I learned that he was returning to South Africa after having worked in the US for eight months and that his home was within 30 miles of Potchefstroom. He was kind, quiet, and interesting—the perfect person to sit next to for over 16 hours. I don't think I would have learned as much about him, or appreciated his fine qualities, if it hadn't been for the dirty tray tables—and this reminded me about the power of positive interdependence. I spent a night in Johannesburg and the next morning headed out for 2½ days of exploration. I had arranged for a driver to take me to the Rhino Reserve—about a three-hour drive, where I planned to go on game drives for two days. Little did I know that this three hours would coincide with the Rugby World Cup and that the South African team—the Springboks—were playing England. My driver was very excited about the game and was kind enough to explain to me what was happening during the game as he drove me to my destination. It was so much fun and I felt fortunate to have shared such an emotional moment with my driver. (The Springboks won and there were parties and dancing in the streets.) I stayed at a lodge that hosts only 10 guests at a time, and where all the guests eat meals together and travel together (for about 9 hours a day in an open safari vehicle) to view game. Being a person who is interested in observing how people get to know one another, accommodate their differences, and work together to maximize their learning, this was an intense "real world" experience. With the support of a highly skilled and enthusiastic guide, this group was great!

Three days into my South Africa trip, I visited Sterkfontein Cave (see https://www.maropeng.co.za/content/page/sterkfontein-caves) where the most complete Australopithecus skeleton, dating back more than three million years, has been found. In an age where divisive language and thinking seem to be almost commonplace, this stop was a poignant reminder of our common origins as humans. Finally, I arrived at Cradle Moon Lakeside Game Lodge for *The Third International Self-Directed Learning Conference*. As I was shown to my rondeval (a round, thatched-roof cottage) a springbok was grazing next to my steps. When I looked toward the lake, I saw zebras, wildebeests, and a variety of birds. Wow—what a conference location. The conference began with a cocktail reception and a five-person band comprised of faculty, staff, and friends of SDL. People were enthusiastic and relaxed. I knew this conference was off to a good start.

Day one began with an absorbing and challenging plenary talk, "*The drought is my teacher": Navigating climate crises as an educator,* provided by Professor Shirley Walters of Cape Town, South Africa. (An earlier version of her talk is available here: https://www.youtube.com/watch?v=7Y5clQ43owA and I recommend it highly.) On day two, I provided a plenary address *"Where do we go from here?"* focusing on connectedness, innovation, and generosity. The conference was exceptionally well organized, and the three days passed too quickly. I attended several interesting sessions, learned more about self-directed learning (SDL) and how faculty utilize cooperative learning in their own teaching. Like faculty in so many places, these instructors are exploring blended and distance learning. They are doing exciting work in problem-based learning (PBL) and working to develop learning experiences linked with students and universities in different countries and continents. I won't attempt to describe all the sessions. The conference program was inviting and visually innovative and I encourage those who wish to know more to view it here: http://education.nwu.ac.za/self-directed-learning/conference-program .

The context for teaching and learning in South Africa is complex. At least 35 languages are indigenous to, and in use in, South Africa. The country recognizes ten official languages and includes four in their national anthem. A beautiful performance can be heard here: https://www.youtube.com/watch?v=CKynWhsY_-o. As I traveled, I regularly heard people switch between languages during group conversations. In addition to language differences,

resources for learning vary across the country—especially access to connectivity—and this is too presents significant challenges. And, of course, evidence of climate change is everywhere as reservoirs and wells sometime become dangerously low or run dry.

This conference was an exciting opportunity to spend time in a supportive community of dedicated and inquisitive learners. During the sessions, and at meals and breaks, participants asked thoughtful questions and engaged in focused conversations. Early in the morning and late in the afternoon, I joined three conference participants who were gracious enough to include me in their leisurely and beautiful walks. The language challenges were evident even here, as my walking partners generously pointed out birds and talked about what they might be called in English so that I could identify them in my bird book.

My time in South Africa included two additional work opportunities. Following the conference, I traveled with some of the faculty back to Potchefstroom where I stayed near the university for several days. On one day I provided two workshops for University faculty related to cooperative learning. The morning workshop--*Developing Equitable Interactions, Multiple Perspectives, and Problem-Solving Skills in Cooperative Contexts*—was a three-hour exploration of creative problem-solving skills nested within a conceptual model for cooperative learning. The two-hour afternoon session—*Building Community and the Habits of Life-long Learning*—focused on the power of base groups and the need to attend to both the task and maintenance functions of groups. The University faculty were a delight to work with and I was grateful for their interest, warm welcome, and dedication to their work.

On my final day, I spent the morning listening to presentations about faculty research into cooperative learning use within their own teaching practice. This group is in the second year of a three-year project and their work is intricate and thoughtful. Often the faculty worked in pairs on their projects and this seemed to add to the richness of their experience and data. Following each presentation, the group talked about the ongoing work—asking questions, giving suggestions, making links to other work and research. Always the tone was positive and with a focus on the future and on creating high-quality learning opportunities for students. I felt both humbled and hopeful by their commitment and grateful for the opportunity to work with them and to experience a small part of South Africa.

SDL already has plans for future conferences, and I encourage readers to consider attending one of their innovative and stimulating professional experiences.

Japan Association for the Study of Cooperation in Education (JASCE) Conference

Kumiko Fushino

The Japan Association for the Study of Cooperation in Education (JASCE) held its 16th annual conference at Kochi University in Kochi City, Kochi Prefecture, for three days from October 25 to 27. One hundred and seventy seven people participated in this conference where they shared ideas, developed friendships, and learned from each other.

There were 48 oral presentations, four roundtables, nine workshops, a special workshop, and a keynote speech. The title of the keynote speech was Collaboration between Community and Students. The main contents of the speech were the relationship between communities and schools, creative learning in communities, and specifics about community building.

Kochi University has a unique faculty, the Faculty of Regional Collaboration, and its 3rd- and 4th-year students volunteered as support members for the conference. This conference signified the potential of cooperative learning beyond schools.

Writing for the Spring 2020 newsletter

We invite you to reflect on your experiences with IASCE and to submit items for inclusion in the final issue of the newsletter to be published in Spring 2020. Short pieces (1000 words or less) are preferred.

The deadline for submissions is 31 January 2020.

Please email submissions to the editor of the IASCE Newsletter, Jill Clark at jilliandc@gmail.com . Put "IASCE 2020 Newsletter" in the subject line of the email.

IASCE and IAIE – Two cooperative and cooperating acronyms

Yael Sharan

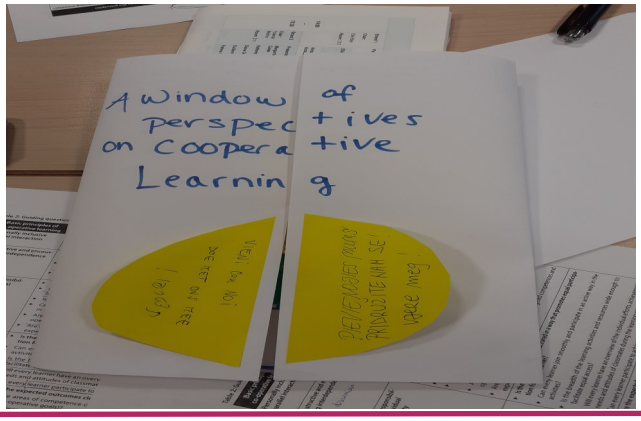
Thirteen CL researchers and practitioners made up the IASCE/CL strand at this year's IAIE conference, titled *Another Brick in the Wall: Rethinking Education,* which took place in November in Amsterdam. Barry van Driel, President of IAIE, (International Association for Intercultural Education), has consistently welcomed collaboration with IASCE, one of the sponsors of this conference. Board members Jill Clark and Yael Sharan co-chaired the strand and facilitated workshops, as did Ferenc Arato, a member of both associations. IASCE Board members Celine Buchs and Wendy Jollife also facilitated workshops. Readers who may not be familiar with our tradition of collaboration with IAIE will find a short history in the September 2019 newsletter.

Instead of concentrating all CL workshops in one or two days, as was done in previous collaborations between the two associations, the IASCE strand in Amsterdam was spread over all four conference days, with three or four workshops each day, allowing conference attendees several opportunities to join a CL workshop. Nevertheless, the strand was designed as a continuum, and to frame the four days Ferenc Arato presented an overview of the "Basic Elements of a Cooperative Paradigm." Yael led the final session that was designed to have participants sum up their experience of CL throughout the four days.

Most of the workshop facilitators in the IASCE strand were veteran implementers and/or researchers of CL whom we've met at former IASCE conferences. The workshops presented a range of ways of applying CL at different levels of cooperation and for a variety of goals. Some offered new ideas about research or implementation; a few demonstrated how to involve teachers unfamiliar with CL principles and procedures; a few were based on familiar procedures, such as Jigsaw, but each in a different way and for a different purpose.

In the September, 2019 issue of the newsletter readers can find a bird's eye view of the essence of each session. Two presenters mentioned in that article, Daniela Pavan and Frank Carvalho, unfortunately could not attend the conference. It was especially gratifying to welcome two researchers of CL who are new to our conferences and strands: Luisa Conti, from the University of Jena in Germany, and Selma Dzemidzic Kristiansen, a doctoral student at the University of South-Eastern Norway. Luisa presented her research on the disempowerment of pupils with migratory backgrounds as part of the Erasmus+ project SHARMED that developed and tested an innovative form of inclusive, participative pedagogy. Selma gave an overview of the preliminary results of her study of students' FtFPI (face to face promotive interaction) within a small cooperative learning group.

In the last session participants were invited to wrap up the variety of their experiences in the strand. Of course, we could not have guaranteed that the same people would attend all 13 workshops, but the 10 participants who came had attended several sessions, and were veteran CL researchers /practitioners. They formed two groups and launched into lively discussions about how to sum up what they had experienced during some or all of the four days. One group created a "Window of Perspectives on Cooperative Learning," in which they itemized the various aspects of CL they had experienced, and added those they considered relevant. The second group reviewed Ferenc's table of the basic principles of CL and then discussed how these could be implemented in the design of a CL strand at a future conference.



You had to be there to feel the involvement and enthusiasm in the room! It is difficult to describe, but a celebration of the end of the session and of the strand was definitely in order. We toasted ourselves and CL with cups of a traditional Latvian balsam drink that the two presenters from Latvia had brought. Then, spontaneously, we began a round of songs: each participant sang a song in his or her native language. The refrain of the Italian presenters' song was familiar to all and we happily joined in. We parted with promises to reunite at a future conference and to continue developing and disseminating cooperative learning.

*For those interested in any particular session, write to Yael for details of the facilitator and an abstract of the session.

MEMBER'S SPOTLIGHT

The story of LAPSA, the Latvian Association for cooperative learning, first appeared in the IASCE Forum series in March, 2003. Take a deep breath and read about the Association's multiple adventures and accomplishments in Latvia since then.

Cooperative Learning in Latvia via LACE/ LAPSA

Indra Odiņa[1], Ilze Miķelsone, Ligita Grigule

In the Latvian language the acronym LACE (in English LAPSA, the Latvian Association for Cooperation in Education) means fox. This allows for creating more associations and deeper understanding of the nature of the organization's activities. And who else, if not the fox, can best describe the viability and sometimes even the survival skills of an organization? It is a fox that can survive almost anywhere – in forests, meadows, mountainous areas, deserts, glaciers and cities – it can swim, run, jump, excel, and change direction quickly.

LACE was launched in 1998 as the spin-off of a Latvian pre-service teacher education institution in cooperation with the Soros Foundation project with Teachers College, Columbia University, USA, and Peter Batelaan of IAIE. Its aim was to facilitate research and implementation of cooperative learning and other interactive learning methods, and to promote and experience exchange, collaboration and in-service education among university lecturers, students, and school teachers.

LACE (LAPSA) is a member of The Latvian Platform for Development Cooperation (LAPAS) and of IASCE. In 2009 we celebrated our 10th anniversary internationally and 20th anniversary locally. At our 10th anniversary international conference: "Cooperation for Sustainable Education: Management, Research, Practice, and Theory," we were honoured to host Yael Sharan from Israel, Bill Sadler, the director of Co-operative Solutions in Scotland, Nicola Davico and Sara Servetti from the University of Torino, Italy, Iveta Silova (now at Arizona State University), and Colin Webster from Lehigh University, USA. LAPSA and her allies have one of the largest geographic spreads and are able to operate in a variety of environments and conditions. Therefore, the range of activities of this anniversary conference was quite versatile – from Riga City Council to the centre for conference and leisure activities of the University of Latvia in Ratnieki – the territory of the Gauja National Park, where some the activities were particularly close to the fox's living conditions in the woods. This allowed participants to experience the collaborative aspects of sport activities and team building games. Participants were experts in various fields: education, music, dance, sports, psychology, leadership, management, and the representatives of government, police, church, non-governmental organizations.

Recently we presented our experience of "Learning Together for Responsible Citizenship" last November, as part of the IASCE strand at the IAIE International Conference "Another Brick in the Wall: Transforming Education." Our workshop emphasized that implementing learning together in different groups: traditional, cooperative, collaborative and transformative, requires participants to learn new concepts and behaviors, not just new "techniques." Our ultimate aim is to develop responsible citizenship. The experience gained learning in a specific type of group can help one become either a personally responsible citizen, a participatory citizen, or a justice-oriented citizen.

The 20 years of LACE ("fox") activity in Latvia were sometimes more active, sometimes slower, just like the steps of fox's dance, the foxtrot, a dance with a wide variety of rhythms of quick and slow steps. Because it can be performed in a wide range of musical styles and in different venues, it has become one of the most popular social dances. Similarly, the activities and paths of LACE members have gone in many different directions and at different speeds, while remaining devoted to the Association and its aim. CL, as a foundation of values and attitudes, has given impetus to educational innovation. Members of the organization realize themselves in many ways: in school (Rita Skara-Mincāne), in sports (Juris Grants, Žermēna Vazne, Jānis Žīdens, Ivars Kravalis), in music (Jānis Mežinskis), in the community (Linards Kumskis), in non-governmental organizations (Inga Belousa), in higher education (Indra Odiņa and Ilze Miķelsone), in the international educational environment (Ligita Grigule, Iveta Silova, Jan Ignatsson), thereby forming a cascading effect in each venue – inviting new dance

partners to join the "foxtrot." CL has served us a **methodology** for transformation, as a **tool** for mutual understanding and help, and as a **means** for increased self-awareness and transformation of our perspectives.

Based on the **methodology of CL** for transformation, LACE has contributed to the spread of critical thinking and the introduction of multilingual education in Latvia, as well as in other former Soviet countries. Latvia is represented as a donor state, providing official development assistance (ODA) to developing countries. LACE members have been sharing their experience to facilitate **multilingual and intercultural education,** first in the Autonomous Republic of Crimea and, from 2014 on, in three Ukrainian regions: Odessa, Chernivtsi and Transcarpathia. LACE member Ligita Grigule gained valuable experience in multilingual education in Georgia, Ukraine, Moldova and Central Asia. Ligita is now an INSET and education policy expert at the Quality Education Support Programme I in Tajikistan.

Another contribution of **CL methodology** is as a strong basis for the development of **Content and Language Integrated Learning (CLIL) and Competence-oriented learning and teaching (COLT)** in Latvia. In 2016, the Latvian State Education Content Centre started a project that introduced a competence-oriented curriculum in all educational institutions. The introduction of COLT in schools posed new demands for teachers and its successful implementation depends primarily on teachers' ability to understand, adopt and use the new approach. As CLIL activities should be engaging, productive, sociable and human, can they be like that without Cooperative Learning? CLIL activities are hard to imagine without CL structures in cross-disciplinary content areas and various grade levels. The most distinctive features of Competence-oriented learning and teaching are:

- Meaningful contexts
- Room for initiative and creativity
- Constructive learning
- Cooperative, interactive learning (with peers, teachers and other actors.)
- Discovery learning
- Reflective learning
- Personal learning

The basic idea behind competence-oriented education is to help learners develop and construct their own knowledge and seek ways to make optimal use of other people's competence in their own learning. Cooperation and interaction are both domains of learning, and vehicles for developing social and emotional skills, fostering values, and forming attitudes.

Concerning **CL as a tool**, LACE members are actively involved in supporting global education issues. A recent example is the **"Partnership of NGOs and HEIs for Development of Cooperation in Education,"** a project in collaboration with The Latvian Platform for Development Cooperation (LAPAS) and the Ministry of Foreign Affairs of the Republic of Latvia and the organization of Global Education Weeks. The project's aim is to facilitate the development and implementation of partnership-based educational activities at universities in Latvia and NGOs, as well as in developing countries, among teaching staff, students, and mentors, through cooperation at different levels of education.

A meaningful benefit of the implementation of the project was the design of a methodology for creating and asking questions on multilingual education and integrating it into the curriculum in four areas: understanding and analysing stories of experiences in different contexts, conducting in-depth research, acting to promote change, and analysing experience in a global context. Nine themes and their contexts were developed for the curriculum: Social networking community; Celebrations, festivals and significant dates; Geography and history of things; Near and far neighbours; Global consumerism; Borderline issues; Language and thinking; Dual nature of globalization; Security in a global world that promotes understanding of the development of cooperation in a national and global context, and the interrelation between these topics.

LACE has contributed to the organization of five campaigns called World's Largest Lesson, and six Global Education Weeks, the most recent of which was **"**Better Future for All." The aim of this international event is to raise awareness of the globalized world. Pre-service and in-service teachers meet to learn more about educational trends in the world, to learn and share experiences in implementing global education, and education for

sustainable development in Latvia. Teachers have the opportunity to cooperate with non-governmental organizations, practitioners in the education sector, and policy makers, environmental and sustainability thinkers, and other stakeholders who care about the future of humanity and the planet, and are active in promoting sustainable development.

Finally, the application of **CL as a means for increased self-awareness and transformation of our perspectives** is evident in the cross-university Professional Master's Study Programmes "Education for Sustainable Development" and "Teacher's Professional Identity and Pedagogical Mastery." These programs, taught by LACE members Inga Belousa and Ilze Dalbiņa, seek ways of implementing education for sustainable development and raising awareness of the role of education in recognizing, preventing and solving sustainability problems and building a sustainable future. In addition, these courses seek ways of promoting students' critical understanding and reflection on the development of their professional identity, enable prospective and practising educators to deepen their understanding of the educational potential to create a fair, peaceful and ecologically balanced world. They also invite practitioners of non-formal education to promote their and society's understanding of and competence in seeking solutions, and building education for sustainable development through collaboration between educational institutions and the local community. LACE members Ilze Miķelsone and Indra Odiņa explore content links, such as teacher's professional identity and wellbeing. They also provide methodological links between cooperation and creativity, including examples of practice and qualitative research studies that integrate creative thinking of professional identity. These are integrated in pre-service and in-service courses, together with the concepts of professional career, personality development, and self-concept.

Cooperative learning has become a part of us – we breathe, work and live cooperating, both in our professional work and in sharing ideas with colleagues, communities and organizations, across different environments.

[1]The president of LAPSA from – a 3-month rotation period that has smoothly turned into… years

From the Journals

Contributors: Jill Clark and Yael Sharan

Cámara-Zapata, J. M. & Morales, D. (2019). Cooperative learning, student characteristics, and persistence: An experimental study in an engineering physics course. *European Journal of Engineering Education*, pp. 1-13. doi: 10.1080/03043797.2019.1569593

The dropout rate of university engineering studies is correlated with the absence of retention of freshman in the basic subjects. The aim of this work is to determine the effect of cooperative learning and the characteristics of students on learning, persistence, and academic performance. We have performed a study of learning, persistence and academic performance in an engineering physics course, comparing two groups with different teaching, one traditional and the other through cooperative learning. In addition, we have analysed the influence of the characteristics of the students on the results and the perceptions of the students regarding the teaching. The students of the cooperative learning group had a normalised average gain in the Force Concept Inventory that was 72.7% higher, a significantly higher persistence, and a final grade similar to that of the group receiving traditional teaching. The previous education and the size of the community of origin of the students had a significant effect on the persistence of the students. The perceptions of the subject and lecturer were similar in both groups.

Cao, X. (2019). Research on the application of group cooperative learning mode in college English teaching in the age of "Internet +". *Frontiers in Educational Research, 2*(7), 45-50. doi:10.25236/FER.2019.020708

The advent of the "Internet +" era has had a profound impact and positive promotion of the reform of the English teaching model. This paper expounds the practicality of the group-based cooperative teaching mode in the "Internet +" era; then it briefly introduces the specific process of the group teaching in the college English course teaching practice using the group cooperative learning mode.

Carillo, N. M. R., Labre, M. G. P., & Valle, V. V. Y. (2019). The effects of cooperative learning on reading comprehension. *Explorador Digital, 3*(3.1), 143-163. doi: 10.33262/exploradordigital.v3i3.1.875

This study aimed to determine the influence of cooperative learning in reading comprehension of high school students at Unidad Educativa “Riobamba” during 2017-2018 school period. For the assessment of the validity and effectiveness of this research, a pre-test and a post-test were applied based on the Cambridge PET (Preliminary English Test) exam, reading section. That exam was composed of two parts: the first was carried out through a cooperative work in pairs and the second part, taking into consideration the cooperative work in groups of four students. A didactic guide for the teacher was designed and applied in the classroom. After that, the analysis of data was made before and after applying the intervention. The teacher's guide was designed to put cooperative learning strategies such as jig-saw, think-pair-share, and reciprocal questioning into action. Three stages of reading were used namely before reading, during reading, and after reading. After the implementation of the proposal, the data analysis was performed using the T-student mathematical test. It is concluded that the students improved their reading comprehension through cooperative work in pairs and in groups as well. It was recommended that teachers practice cooperative learning in the classroom to improve students' reading comprehension in order to optimize their development in English language learning.

Cecchini, J. A., Gonzalez de Mesa, C., Llamedo, R., Martinez, B. S., & Rodriguez, C. (2019). The impact of cooperative learning on peer relationships, intrinsic motivation and future intentions to do sport. *Psicothema, 31* (2), 163-169. doi: 10.7334/psicothema2018.305

Background: Understanding intra-individual change is a key question when studying causality between variables. The first objective was to examine, using the technique of true intra-individual change (TIC, Δ) for the first time, the motivational sequence proposed by Vallerand (1997), ΔCo-operative learning → ΔRelatedness → ΔIntrinsic motivation → ΔIntention to do sport.

Method: The sample comprised 372 students divided into two groups, experimental and control. During a 6 month period the experimental group was taught co-operative learning strategies by a suitably trained teacher. Results: Positive changes were seen in the experimental group in all of the variables examined, while the control group remained unchanged. The results of the TIC suggest accepting the motivational sequence describe. Conclusions: Co-operative learning may by an appropriate method to improve self-determined motivation according to the model described.

Chong, X. T., & Yunus, M. M. (2019). The effects of Kagan cooperative learning structures in teaching subject–verb agreement among rural Sarawak learners. *Arab World English Journal (AWEJ), 10* (2), 151-164. doi: https://dx.doi.org/10.24093/awej/vol10no2.13

Even after undertaking years of formal education to acquire the language in schools, having a poor command of English remains a problem faced by most Malaysians, especially students in rural schools of Sarawak. Based on the error-analysis carried out by recent research, subject–verb agreement (SVA) is one of the most frequent errors committed by students. To overcome this problem, teachers should significantly improve students' mastery of SVA in the English language through effective teaching methods. Therefore, this research was conducted to explore the effects of Kagan Cooperative Learning Structures in teaching SVA among rural Sarawak learners. In this study, 35 Form 4 students were selected from a secondary school in the Belaga District, Sarawak as the research participants. Questionnaires and semi-structured interviews were used as data collection tools. Overall, findings demonstrated that students showed positive feedback after the intervention was implemented. Results of this research will hopefully provide insights to secondary school students, teachers and the community in the cooperative teaching and learning of grammar.

Hasyim, F. (2019). Cooperative learning approach to an English academic reading course. *Script Journal: Journal of Linguistic and English Teaching, 4*(2), 147-160. doi: 10.24903/sj.v4i2.338

This research intended to get a description of the Cooperative Learning application using Student Teams Achievement Divisions (STAD) type to improve students' motivation and independence learning level. The applied research method was classroom action research. The observations have been done during seven cycles to research the subjects; those are students of Basic Academic Reading Class C of 2018/2019 at the department of management, faculty of economy, Universitas Islam Indonesia. The result displayed that the number of students achieving maximum scores (A) has significantly increased, up to 31% of previous year as the baseline. Meanwhile, the average students' attendances in the entire semester have also increased up to 13% of the previous year baseline. The questionnaire was also distributed before and after cycles to measure the changes in students' perception of their perceived motivation and independent learning level. The result indicated the increase in average score of all variables. However, the result of the independent sample t-test showed that sig (2-tailed) score of students' motivation and independence learning level have significant differences. Thus, it is concluded that the Cooperative Learning model on Student Teams Achievement Divisions (STAD) type has a positive and significant impact on developing student's motivation and independent learning level.

He, Y. (2019). Research on the application of cooperative learning in college English teaching. *Theory and Practice in Language Studies 9*(10), 1362-1367. doi: 10.17507/tpls.0910.16

By collecting and sorting out relevant theoretical materials, the author analyzes the current situation of college English teaching, and by selecting experimental classes to demonstrate the obvious progress before and after the adoption of cooperative learning teaching model, the author holds that it is imperative to implement cooperative learning teaching model at the present stage. On this basis, this paper tries to put forward several effective cooperative learning strategies and suggestions, hoping to enlighten the front-line teacher's engagement in college English teaching and researching.

Inocian, R. B., Dapat, L. C., Pacaña, G. B., & Lasala, G. M. (2019). Indigenizing and contextualizing the use of cooperative learning strategies. *Journal of Research, Policy & Practice of Teachers & Teacher Education, 9* (2), 1-18.

Exploring the indigenous Cebuano cultural practices contextualizes a culture-based Cooperative Learning (CL) strategy. The study explored the socio-cultural background of Cebuano cooperation as reflected in the communal practices of the tagay, alayon, yayong, tambayayong, and unong (TAYTU); the process of localized cooperative learning strategies contextualized in the TAYTU; designing lesson exemplars in the TAYTU way. This qualitative study used a directive content analysis design using relevant research findings and initial codes that serve as bases of future projections, as a form of trend studies in CL strategies. The exploratory design was used to provide visualization of TAYTU exemplars. FGDs were conducted among the 60 research participants: alayon farmers (20), tambayayong fishermen (20) and male-drinkers (20), using enumeration sampling and inclusion criteria to establish the socio-cultural background of the study. The indigenous identities of the Cebuano cultural practices bridge a potential exploration of the localized and contextualized CL strategies in realizing the noble aim of malasakit in the Philippines' AmBisyon Natin 2040. Catharsis in tagay; togetherness and unity of command in alayon; sensibility and sensitivity in yayong; sharing of extreme emotions in tambayayong; and intimacy and solidarity in unong featured a socio-cultural background necessitated in the crafting of the TAYTU Models of CL Teaching exemplars.

Karchmer-Klein, R., Soslau, E., & Sutton. J. (2019). Examining the instructional design of interactive and collaborative learning opportunities. *Journal of Teacher Action Research, 6*(1), 4-20.

As interest in fully online programs increases at institutions of higher education, faculty members must adapt their pedagogical practices to successfully integrate the digital tools available for teaching and learning. This action research study examined if and how faculty in a school of education designed instruction that leveraged digital tools to provide collaborative and interactive learning opportunities in an online program in teacher leadership. Framed by tenets of a sociocultural perspective and the technological affordances of multimodality, collaboration, and interactivity, a variety of data was qualitatively analyzed. Findings revealed interactivity was established when instructional design explicitly guided students to interact with others. Interactivity was also established when students were given opportunities to apply content learned in class, analyze their actions, and report on the experiences to others using multiple modes accessible through digital tools. Related to collaboration, analysis indicated that program design encumbered the implementation of collaborative activities due to large class enrollment and the short duration of the academic semester. These findings will inform future revisions to the program under study as well as be shared with other faculty who are charged with designing online courses but may not have online pedagogical expertise.

Kimmelmann, N., & Lang, J. (2019). Linkage within teacher education: Cooperative learning of teachers and student teachers. *European Journal of Teacher Education, 42*(1), 52-64. doi: 10.1080/02619768.2018.1547376

The close linkage between different institutions is widely recognized as a method of improving teacher education. This paper introduces an attempt to link university teacher training programmes with further teacher education thereby showing the benefits of the approach and factors influencing its success. To enable teachers and student teachers to participate, a blended learning course programme was designed. The findings presented in this article are based on a course evaluation comprising data from 19 teachers and 88 student teachers. The findings indicate that teachers and student teachers benefit in many ways through cooperative learning. For example, both groups appreciated having multiple perspectives and the opportunity to exchange their experiences and opinions. Communication and interaction between teachers and student teachers is significant to make cooperative learning successful. Adequate communication and interaction, satisfying for both participant groups, are crucial for the success of this approach.

Knutas, A., Ikonen, J., & Porras, J. (2019). Computer-supported collaborative learning in software engineering education: A systematic mapping study. *International Journal on Information Technologies & Security, 7* (4), 1-28. https://arxiv.org/abs/1906.10710v1

Computer-supported collaborative learning (CSCL) has been a steady topic of research since the early 1990s, and the trend has continued to this date. The basic benefits of CSCL in the classroom have been established in many fields of education to improve especially student motivation and critical thinking. In this paper we present a

systematic mapping study about the state of research of computer-supported collaborative learning in software engineering education. The mapping study examines published articles from 2003 to 2013 to find out how this field of science has progressed. Ongoing research topics in CSCL in software engineering education concern wider learning communities and the effectiveness of different collaborative approaches. We found that while the research establishes the benefits of CSCL in several different environments from local to global ones, these approaches are not always detailed and comparative enough to pinpoint which factors have enabled their success.

Kristiansen, S. D., Burner, T., & Johnsen, B. H. (2019). Face-to-face promotive interaction leading to successful cooperative learning: A review study. *Cogent Education, 6*(1). doi: 10.1080/2331186X.2019.1674067

The article presents a review of 34 studies conducted from 1995 to 2017 focusing on face-to-face promotive interaction (FtFPI) factors that may lead to successful cooperative learning (CL) in small groups, as guided by the following research question: "Which FtFPI factors lead to successful CL in small groups?" A manual and citation database search were used to find relevant studies. The findings indicate that students' interpersonal behavior, their experiences and active participation in the CL process, communication and support to each other, and teachers' influence on promoting students' interaction leading to successful CL in small groups. Moreover, these factors may lead to students' deep learning. However, the review suggests that systematic preparations must be made by both teachers and students if the CL is to be successful. Thus, more empirical research is needed to understand the complexity of students' FtFPI and to investigate the development of FtFPI based on students' and teachers' experiences in small CL groups.

LeFebvre, L. E., Yilmaz, G., LeFebvre, L., & Allen, M. (2019) Argumentative communication in cooperative learning groups: Members' use of evidence and non-evidence. *Communication Teacher, 34*(1), 68-86. doi: 10.1080/17404622.2019.1614204

This study examined how group members with differential levels (highest, middle, and lowest) of ability contributed to argumentative communication while facilitating a cooperative learning process in a small group communication course. Results demonstrated that during discussions: (1) highest ability members utilized more evidence than middle or lowest ability members, (2) lowest ability members generated more non-evidence than evidence, and (3) middle ability members appeared to be less active in articulating evidence. These findings provide evidence that instructors should focus on teaching students how to communicate evidence, identify facilitative versus inhibitive arguments, and respectfully acknowledge and evaluate contributions for effective group learning.

Mayo, J. A. (2019). Comparing Cooperative Learning Strategies in Assessment Instruction. *Journal of Teacher Action Research, 6*(1), 21-31.

As a follow-up to a prior exploratory investigation of cooperative learning in teaching assessment to early-childhood-education majors, the present study systematically compares the pedagogical efficacy of two variants of cooperative learning. In the first cooperative learning condition, students reprised the simulated classroom practice evidenced in the Cooperative Assessment Portfolio (CAP) assignment used in the previous study. In the second condition, students completed a Cooperative Assessment Case Analysis (CACA) assignment with distinguishing features of case-based learning. On all quantitative and qualitative measures, results favored the CAP over CACA assignment. Findings are discussed in light of social constructivist pedagogy and future directions for research.

Moges, B. (2019). Practices and Challenges of Cooperative Learning in Selected College of Arsi University: As a Motivational Factor on Enhancing Students' Learning. *Universal Journal of Psychology 7*(1), 1-17. doi: 10.13189/ujp.2019.070101

The objective of this study was to examine the practices and challenges of cooperative learning as a motivational

factor on enhancing students' learning in selected colleges of Arsi University. This research has mixed approach both qualitative and quantitative; while its method is descriptive and explorative in their nature. The total sample of the study was 421, 330 graduate students, 85 instructors and the 8 deans and vice deans were included as a sample through stratified random sampling technique. Instruments employed in this study included questionnaire, semi-structured interview and observation. For questionnaire a five point Likert scale was adopted. Frequencies, percentage, mean and SD was used to analyze the data. Information generated from interview and classroom observation was described qualitatively. The findings indicate that instructors and students have positive attitudes towards cooperative learning and they prefer it to lecture-style. The findings suggest that training in cooperative learning is important to implement it. Accordingly the following findings were obtained: instructors' lack of knowledge and training on cooperative learning; students' lack of interest to participate in cooperative learning and passive style of learning; lack of enough support from administrative and unavailability of instructional materials were among the challenges which hinder the implementation of cooperative learning. Consequently, instructors are practicing traditional teaching methods. Similarly, students indicated that they are not willing to participate in group discussion while the researcher observed in the actual classroom. The challenge for instructors is to develop skills to facilitate positive teamwork experience among their students who will need to interact with each other in transnational teams in the workplace of the future. It can be recommend, providing adequate administrative support, preparing supplementary materials, preparing cooperative learning training for instructors and inviting experts to share experience about cooperative learning. Cooperative learning method should be adopted by all instructors as an effective learning strategy in order to improve students' learning.

Mukuka, A., Mutarutinya, V., & Balimuttajjo, S. (2019). Exploring the barriers to effective cooperative learning implementation in school mathematics classrooms. *Problems of Education in the 21st Century, 77*(6), 745-757. doi: 10.33225/pec/19.77.745

Literature is replete with research confirming the benefits of cooperative learning on students' academic achievement and attitude towards mathematics. Despite these benefits, cooperative learning implementation in most Zambian secondary school mathematics classrooms has remained a challenge. An explanatory sequential mixed methods research design was employed to determine the causes of teacher-resistance to cooperative learning implementation in selected schools. A cluster random sampling method was used to select 62 teachers (43 male and 19 female) of mathematics from six public secondary schools in Ndola district of Zambia. A questionnaire was administered to all the 62 teachers followed by lesson observations in six randomly selected grade 11 mathematics classrooms, whose teachers later attended a focus group discussion. Research findings revealed that the majority of participants prefer expository teaching to cooperative learning. More than 64% of the participants indicated that they resisted implementing cooperative learning in their classrooms due to shortcomings in; assessing learners, ensuring a disciplined class environment, completing the already bulky syllabus, handling large classes, students' low reasoning abilities and preparation time versus high teaching loads. These results provide evidence of the need for more attention to how the identified challenges could be addressed, not only in Zambian mathematics classrooms but in other educational settings elsewhere.

Nguyen-Phuong-Mai, M. (2019) Culturally appropriate face strategies in cooperative learning with insight from cultural neuroscience. *Comparative Education, 55*(1), 66-96. doi: 10.1080/03050068.2018.1541664

Face, understood as public image, exerts critical influence on interpersonal communication. Incorporating insight from cultural neuroscience, a number of potential mismatches with regard to facework are revealed when methodologies originated from the West are applied in a different context. This paper examines culturally appropriate face strategies in cooperative learning among Vietnamese learners. Our results show that discussion outcomes increase when self-face and other-face are confirmed and group-face is mildly confronted in form of intergroup competition. The paper indicates that educational methods underpinned by fundamental psychological assumptions based on Western values should be adjusted to be culturally appropriate for contexts in which it is applied.

Nhan, H., & Nhan, T. A. (2019).Different grouping strategies for cooperative learning in English majored seniors and juniors at Can Tho University, Vietnam. *Education Sciences, 9*(59), 1-16. doi:10.3390/educsci9010059

We present research on the attitudes of seniors and juniors doing a major in English toward different grouping strategies for cooperative learning at Can Tho University, Can Tho city, Vietnam. The collected data is analyzed by a means of quantitative approach. The findings not only facilitate the further understanding of English majors' opinions on different grouping strategies, but also provide teachers and lecturers who employ cooperative learning as one of their teaching strategies with useful clues on which group formation they should use. More importantly, we hope to give an insight to the characteristics of different grouping strategies, in order to find out the group forming method(s) that simultaneously boosts group dynamics, students' satisfaction, and academic achievements.

Orlando, J., & Guerrero, R. (2019). Some contributions to English oral interaction from cooperative learning. *RHS. Revista Humanismo y Sociedad Núm. 7*(1), 22-36. doi: 10.22209/rhs.v7n1a02

Cooperative learning allows teachers and learners to develop workshops by teams to build knowledge according to the contents proposed in the English classes. This article is the product of qualitative research, which objective was to explore how cooperative learning improves the oral interaction in English of ninth grade students at a private school in Ubaté, Cundinamarca. This study was framed in the Action Research, the instruments to collect data were the teacher's journal, reflections from each workshop and three interviews to sixteen students of the participating grade. Teamwork, cooperative learning and oral expression in English of ninth grade students are highlighted in the results. The conclusions point out that cooperation is a social practice among students that stimulates, motivates and improves learning and oral interaction in English.

Perez-Poch, A. (2019). Cooperative learning and embedded active learning methodologies for improving students' motivation and academic results. *International Journal of Engineering Education*, pp. 1-8. http://hdl.handle.net/2117/171236

In recent years, a number of teaching strategies have been applied in higher education to improve students' academic results and motivation, with a focus on active methodologies. These techniques highlight the student learning process at the forefront of the classroom. Embedded Methodologies, defined as a mixture of learning strategies which are combined in a single educational environment, have a potential for boosting their impact. Few studies have addressed what impact may be involved by applying them in the learning process. An Embedded Methodology in Engineering higher education with Cooperative Learning, Just-In-Time Teaching and active informal motivation methodologies is proposed. The authors present a ten-year longitudinal study in which academic results and student satisfaction reported by a standardized survey among 294 students attending a "Telecommunications and Internet" subject at EEBE Engineering School from UPC-BarcelonaTech (Spain). The results show that Embedded Methodologies significantly improved students' motivation and their final marks; in particular, for those students at risk of failing the subject but not with the lowest grades. The applied learning methodology was found to be the best predictor of their grades in the subject, among other factors such as their performance in the University Entrance exam. Students' perception of the quality of teaching and their academic results were significantly better when compared with those student groups that were exposed to only one active methodology or none at all, suggesting that a mixture of motivational learning techniques boost their impact on the students' learning process and on their motivation.

Salim, K., Abdullah, M., Haron, H., Hussain, N., & Ishak, R. (2019). A Team-teaching model in an informal cooperative learning classroom. *International Journal Of Emerging Technologies In Learning (IJET), 14* (20), 44-57. doi:http://dx.doi.org/10.3991/ijet.v14i20.11458

Research has indicated that informal cooperative learning (ICL) can make the environment in a classroom more conducive for teaching and learning. Through ICL, students could focus their attention on the material taught in class and help each other in the learning process. However, implementing ICL may require more time and effort from the lecturers because they need to prepare teaching materials and different tasks for class activities. Sometimes it may be difficult for the lecturer to monitor all students in the groups when implementing ICL.

Thus, this study aimed to explore the implementation of team-teaching in ICL classroom. The action research meth-od was used in this study where the researchers themselves involve in implementing ICL through team-teaching, evaluate the process, do reflection and change the practice based on the evidence gathered. The participants were 32 first-year-students who were mainly exposed to the traditional method of lecture. Students and lecturers' activities, behaviors, interactions, and reflections were recorded in a research journal and later analyzed to determine the students' and lecturers' experience in ICL classroom con-ducted through team-teaching. The findings showed that it was easier to monitor and facilitate the students as well as to manage the class by implementing ICL through team-teaching. In addition, the workload of the lecturers has reduced which in turn gave them more time to plan, prepare and organize teaching materials.

Sari, S. Y., & Arianto, M. A. (2019). Teaching general English in large class settings: Does collaborative learning method work? *Journal of English Education, Linguistics and Literature*, *6*(1), 21-31. doi.org/10.32682/jeell.v6i1.1051

Teaching English as a foreign language has been challenging from time to time. Moreover, dealing with a big number of students in one class will add some displeasure, not to mention various backgrounds of knowledge and gap of English ability that they have. This article aims to see the effectiveness of Colaborative Learning (CL) method in improving students speaking ability and studying behaviour in general English subject in a large classroom context. A classroom action research is used as the experiment method, where post-test and observation sheets happened to be the instruments. The finding of this paper shows that CL successfully promotes an option to improve students' performances, which are spoken ability and studying behavior. Students' attainment in speaking included pronunciation, vocabulary, content accuracy and grammar. Meanwhile, students' attitude that was observed covered enthusiasm, participation, discipline and teamwork.

Singh, C. K. S., Singh, T. S. M., Ong, E. T., & Abdullah, M. S. H. B. (2019). Developing a cooperative interactive learning module for improving speaking skills of graduate students. *International Journal of Innovative Technology and Exploring Engineering (IJITEE), 8*(7S2), 420-425.

Students in higher learning institutes in Malaysia face some difficulties in expressing themselves in English language and show lack of competency in speech. They perform poorly in the English language during examination held in the university and also interviews. Based on the problems encountered by the weak students, it was deemed necessary to provide some form of guidance to enable the ESL students to speak confidently. The guidance comes in the form of a cooperative interactive learning module for teaching speaking to weak ESL students. The purpose of the study is to develop a cooperative interactive learning module as a teaching approach that could benefit ESL students at the university. This study also investigates the attitudes of the students before and after using the cooperative interactive learning module concerning speaking.The research comprises of two stages namely instructional design, ADDIE model (to develop the module). A quasi-experimental design was carried out to look at the effectiveness of the Cooperative Interactive Learning Module on students' speaking skills. Cooperative Interactive Learning (CIL) Training Module was designed as a teaching and learning aid to assist educators to enable them to use some of the fundamental concepts of (CIL) in their everyday teaching to enhance ESL students' speaking skills. The module consists of three units of hands on activities, current practices on (CIL) and prior knowledge, CL concepts, conceptualization of a structural and complex CIL approach. The findings revealed that the Cooperative Interactive Learning Module was effective for higher learning institutes students because it enhanced graduates' communication skills that will enable them to understand written and spoken instruction, and express ideas in a variety of situations.

Tadesse, T., Gillies, R. M., & Manathunga, C. (2019). Shifting the instructional paradigm in higher education classrooms in Ethiopia: What happens when we use cooperative learning pedagogies more seriously? *International Journal of Educational Research 99*, 1-12. doi: 10.1016/j.ijer.2019.101509

This study examines the relative effectiveness of formal cooperative learning (CL), compared to traditional lecture-based instruction, in improving instructional processes and learning outcomes. For this, the study used non-equivalent control groups design, collecting data from a sample of volunteered undergraduate students

(n = 347) in a large public University in Ethiopia. In general, results indicate that higher perception of academic challenge, cooperative interaction, learning gains, and overall satisfaction were associated with formal CL, rather than traditional lecture-based instruction. In addition, results show that cooperative learning lessons were associated with more positive relations between academic challenge, cooperative interaction, learning gains, and overall satisfaction. Implications for higher education teaching and learning from a social interdependence theory perspective is discussed.

Tamimy, M. (2019). The cultural attitudes towards cooperative learning: What proverbs can offer. *Journal of Intercultural Communication Research 48*(2), 1-19. doi: 10.1080/17475759.2019.1639536

Cooperative Learning (CL) is acclaimed for its effectiveness, but is not widely used, partly because the role of culture in its implementation is overlooked. To fill this gap and to introduce an alternative methodology for the study of culture, this interdisciplinary paper examines Iranian proverbs to see how Iranians' culture feels about group work and what psychosocial factors contribute to their attitudes. The findings suggest Iranians' culture, notwithstanding its potentiality for cooperation, is relatively non-cooperative. This ambivalence was observed to originate culturally from distrust, egoism, antipathy towards reciprocal altruism, and diffusion of responsibility. These findings substantiate the functionality of this alternative methodology.

Tsivitanidou, O., & Ioannou, A. (2019). What do educational data, generated by an online platform, tell us about reciprocal web-based peer assessment? *Transforming Learning with Meaningful Technologies*, pp. 600-603. doi: 10.1007/978-3-030-29736-7_48

Peer Assessment (PA) is a promising evaluation strategy in the educational context, not only due to its effectiveness to reduce instructor's evaluation loading, but mainly due to its benefit towards student development e.g., teamwork, in-depth thinking. In this exploratory study we sought to explore how do educational data, as generated by an online platform (i.e., Peergrade) and displayed in teacher's and students' Learning Analytics Dashboard (LAD), can potentially inform us of the PA process and the peer interactions, as they take place. Participants in the study were 21 undergraduate teacher-students who attended a science course (electrical circuits topic) following the inquiry-based approach. Students were asked to reciprocally and individually assess the responses of a peer in a given task. The findings of this study have implications towards the establishment of new theoretical frameworks and developments for bridging educational theory, design process and data science, in the field of assessment.

Van Ryzin, M. J., & Roseth, C. J. (2019). Effects of cooperative learning on peer relations, empathy, and bullying in middle school. *Aggressive behaviour, 45*(6), 643-651. https://doi.org/10.1002/ab.21858

Although researchers have developed prevention programs to reduce bullying, the results are mixed, and this may be due to a degree of uncertainty in their theoretical foundation. In particular, these programs share an emphasis on empathy as a personal attribute that can be enhanced among students through the application of specific curricula that will, in turn, contribute to a reduction in bullying behavior. However, the link between empathy and bullying is unclear, as is the ability of bullying prevention programs to actually impact student empathy. In this study, we used a cluster randomized trial (N = 15 middle schools, 1,890 students, 47.1% female, 75.2% White) to evaluate the impact of cooperative learning on bullying, and we evaluated whether these effects were mediated by empathy and peer relatedness. Our results indicated that cooperative learning can significantly reduce bullying, and that some of this effect is transmitted via enhancements to affective empathy. Cooperative learning also demonstrated significant positive effects on cognitive empathy, but this did not have an effect on bullying. We also found that the effects of cooperative learning on cognitive and affective empathy were mediated by improvements in peer relatedness. These findings add a degree of clarity to the literature, and also represent the first time, as far as we are aware, that an antibullying program has been found to have significant effects on both cognitive and affective empathy.

Wang, H., Chen, H., Lin, H., Hong, Z., & Huang, Y. (2017). Longitudinal study of a cooperation-driven, socio-scientific issue intervention on promoting students' critical thinking and self-regulation in learning science. *International Journal of Science Education, 39*(2), 1-25. doi: 10.1080/09500693.2017.1357087

This longitudinal study explored the effects of a Cooperation-driven Socioscientific Issue (CDSSI) intervention on junior high school students' perceptions of critical thinking (CT) and self-regulation (SR) in Taiwan. Forty-nine grade 7 students were randomly selected as an experimental group (EG) to attend a 3-semester 72-hour intervention; while another 49 grade 7 students from the same school were randomly selected as the comparison group (CG). All participants completed a 4-wave student questionnaire to assess their perceptions of CT and SR. In addition, 8 target students from the EG with the lowest scores on either CT or SR were purposefully recruited for weekly observation. These target students and their teachers were interviewed one month after the intervention in each semester. Analyses of covariance and paired-wise t-tests revealed that the EG students' perceptions of CT and SR in learning science were improved during the study and were significantly better than their counterparts' at the end of the study. Systematic interview and classroom observation results were consistent with the quantitative findings. This study adds empirical evidence and provides insights into how CDSSI can be integrated into planning and implementing effective pedagogical strategies aimed at increasing students' perceptions of CT and SR in learning science.

Yadegaridehkordi, E., Shuib, L., Nilashi, M., & Asadi, S. (2019). Decision to adopt online collaborative learning tools in higher education: A case of top Malaysian universities. *Education and Information Technologies, 24*(1), 79-102. https://doi.org/10.1007/s10639-018-9761-z

Recently cloud computing has received significant attention, but its adoption is still far from reaching its full potential, especially in educational contexts. Only a few studies have considered the students' behavior toward adoption of cloud technology in particular for online collaborative learning purposes. Therefore, this research seeks to develop an adoption model for online collaborative learning tools in cloud environment. To this end, Technology Acceptance Model (TAM) is extended by adding mobility, collaboration, and personalization as external variables. A sample of 209 respondents is collected from four top Malaysian universities and Structural Equation Modelling (SEM) is utilized to assess the research model. The findings show that intention to adopt is significantly affected by perceived usefulness. Although, perceived ease of use does not perform a direct impact on intention to adopt, its indirect influence through perceived usefulness is supported. Mobility and personalization significantly influence perceived ease of use, but they have insignificant impacts on perceived usefulness. Furthermore, perceived usefulness and perceived ease of use are significantly influenced by collaboration. This study rounds off with discussion and conclusions, highlighting implications. The findings provide a baseline for cloud service providers and education institutions in providing effective online collaborative learning tools.

Yemi, T., Binti Hj Azid, N., & bin Md Ali, M. (2018). Cooperative learning: An approach for teaching mathematics in public school. *European Journal of Social Sciences Studies*, *2*(10), 122-133. doi.org%2F10.5281%2Fzenodo.1173407

This paper presents a definition, the history, types, principles, a review of related literature, and application of cooperative learning. Cooperative learning is another method of teaching and learning that involves the students of different stages of willingness work cooperatively towards a common objective. The literature revealed positive effects of cooperative learning on students, especially in the areas of achievement and attitudes toward learning of mathematics content. The schools that have applied cooperative learning have found it to be a very effective teaching and learning method.

Zaka, P., Fox, W. H., & Docherty, P. D. (2019). Student perspectives of independent and collaborative learning in a flipped foundational engineering course. *Australasian Journal of Educational Technology, 35*(5), 79-94. https://doi.org/10.14742/ajet.3804

Flipped teaching and learning approaches are being increasingly used in higher education. Some advantages associated with the approach include providing opportunity for self-directed learning and enhanced collaboration between students. In this study, an implementation of a flipped approach in a first year foundational engineering dynamics course was researched to investigate student views on independent and collaborative learning inherent in flipped learning. Eighteen undergraduate students (11 male and 7 female) participated in this qualitative study. The flipped part of the course was designed to include self-paced independent learning and in-class learning, with opportunities to collaborate, ask questions, and work on examples. Data were collected using semi-structured interviews. The results of the study indicated that students universally enjoyed learning independently and appreciated the increased collaboration induced by the flipped approach. The flexibility of the approach enabled a range of approaches to independent learning and collaboration, and students were able to find learning styles that suited them. This article concludes with a range of recommendations for practice to further support independent and collaborative learning with the use of flipped approaches.

Zambrano. J., Kirschner, F., Sweller, J., & Kirschner, P. A. (2019). Effects of group experience and information distribution on collaborative learning. *Instructional Science, 47*(5), 531–550. https://doi.org/10.1007/s11251-019-09495-0

Collaborative learning is a widely used instructional technique, but factors determining its effectiveness still are unclear. Cognitive load theory was used to examine the effects of prior collaborative experience and density of distribution of information amongst learners on short-term retention and delayed retention tests, as well as cognitive efficiency of collaborative learning and its outcomes. Data obtained with 240 secondary school students showed that groups with experience in collaboration outperformed and were more cognitively efficient than inexperienced groups, and low information density increased performance during the learning process. Also, when tasks required processing high information density, experienced groups were more cognitively efficient than inexperienced groups. For tasks with low information density no difference was found. These results provide instructional implications for designing effective collaborative learning environments.

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