

SUBFLY learning concept

Traian Ionut LUCA¹, Erik LANKUT², Ioan Cristian CHIFU³, Ralf Thomas HEBERLING⁴

Abstract

A modern student-centered applied education tool is presented. Concept and implementation of the concept are presented. Step by step presentation of the concept makes it easily replicable. Results, findings, and challenges determined during the 9 editions already implemented facilitate a deeper understanding of the concept and prove its' reliability. Starting from a survey applied to participating students improving direction are identified.

Key words: education methods, applied education, intercultural, student-centered, joint programs.

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Introduction

Academia has a double role in the society, facilitator of research and knowledge transfer and facilitator of education.

A teaching method represents all methods, principles and tools used by the educator to facilitate the learning process. To achieve high efficiency, a teaching method must be correlated with the subject taught and with characteristics of the audience. It means that different teaching methods are recommended for teaching math or literature or for teaching university students or primary school students.

Another important criterion when dealing with education methods is the entity placed in the center of the process. According to (Teach.com, 2022) there is teacher-centered approach and student-centered approach. Teacher is playing the central role in teacher-centered approach, while students are defined by (Rodriguez, 2012) as “empty vessels” who receive knowledge from their educator. Teaching and evaluation are considered two separate parts. Scored tests and assessments are the main the evaluation tools. In student-centered approach, teacher and students are playing an approximately equal role. Teacher is coaching the students and facilitating understanding of learning material. Teaching and evaluation are combined, the main evaluation tools being projects, portfolio, involvement in activities (Teach.com, 2022).

Accelerated development of humanity, generated by a performant research activity and technological progress, is inducing transformations in teaching methods to keep up with the new requirements of

¹ Babes-Bolyai University, Horea Street, No. 7, Cluj-Napoca, Romania, traian.luca@ubbcluj.ro. Corresponding author

² University of South-Eastern Norway, Kongsberg Campus, Norway, erik.lankut@usn.no

³ Babes-Bolyai University, Cluj-Napoca, Romania, cristian.chifu@ubbcluj.ro

⁴ University of South-Eastern Norway, Drammen Campus, Norway, ralf.heberling@usn.no

humans and business environment. Thus, an evolution from classical methods towards modern teaching methods and blended learning is visible.

A non-exhaustive list of classical methods comprises from: lecturing, demonstrating and classroom collaborating.

Lecturing represents an oral presentation for a topic, probably being the primary teaching method in universities. According to (Center for the Integration of Research, 2014), the main *advantages of lecturing are*: (1) possibility to disseminate unpublished material, (2) extended teacher control (aim, content, organization, and direction of presentation), (3) capability to clarify text material, (4) the guiding line for student through learning material, (5) high cost efficiency (teacher is addressing a large group of students per time unit) and the main *disadvantages of lecturing are*: (1) passive role of student, (2) teachers effort for understanding students' difficulties with the content, (3) long and unguided student time outside the classroom for understanding the content, (4) requirements for teachers' effective communication skills.

Demonstrating is the teaching process where student is guided by teacher through the process of determining an idea (in general called conclusion). Previously acquired knowledge and logical thinking are the main tools employed during a demonstration. According to (Vanaja, 2004) demonstrating is combining "information imparting" with "showing how". Is an efficient method for teaching Math and Science. Focus might be on building a logic structure to prove the desired idea or on assuming opposite of the idea and proving that opposite can't be valid. Learning process is built on the interaction between teacher and student. Different formats and instruction materials can be included to make the learning process engaging (Du, 2012). It is adaptable to both group and individual teaching (Heidgerken, 1965) and activates several of learners' senses, creating more opportunities for learning (Neeraja, 2011).

Classroom collaboration is a teaching method where teacher is playing a facilitator role while students involve actively in the process by collaborating with each other. Teachers might define some boundaries for students' collaboration, otherwise the entire process might look noise and disorganized. For achieving high efficiency students must prepare the process before, during and after learning. For example, before learning, students set goals and plan learning tasks; during learning, they work together to accomplish tasks and monitor their process; and after learning, they assess their performance and plan for future learning (Tinzmann, et al., 2012).

Considering the technological development and overall evolution of society, the "chalk-talk" teaching methods are outdated and not efficient for transmitting the knowledge and information. In an environment where besides theoretical knowledge students demand also practical knowledge and soft skills necessary to deal with real life challenges, it's obvious that new modern teaching methods are required.

Modern teaching method might be considered a student-centered learning method based on tasks defined by teacher who provides study material required for learning or understanding the topic. Teacher might connect different tasks to facilitate students' creativity. For solving the tasks students work in small groups created based on students' interest and feelings. Interaction within and between groups enable students' initiative and collaboratively work and train their respect for competitors.

Among several modern teaching methods widely described in literature and implemented by schools worldwide, we will concentrate on: *flipped classroom, self-learning, gamification, VAK teaching and crossover learning.*

Traditional way of learning is based on a teachers' presentation in the classroom for the new content followed by home exercises performed by students for a better understanding of the concept. *Flipped classroom* is reversing the entire process. Students study at home the new topic, using materials provided by teacher, video, tutorials, and online content, followed by classroom debates and exercises with colleagues and teacher. Flipped classroom allows students to allocate as much time as necessary to understand a topic and if necessary to come back to certain topics, compared with traditional methods when they have a certain period of time for a topic before teacher moves to the next chapter.

Wide access to information facilitated by modern technology provides access to new information. Students might develop interest for a certain topic, which will lead them to *self-learning*. When applying this teaching method, teachers should be open minded to guide and encourage student to discover new ideas and to offer them the opportunity to present their topic of interest. Studying a subject of interest is increasing students' motivation, generating a deeper understanding and an efficient knowledge transfer.

When using *Gamification* teacher should design a project correlated with the topic, age, specialization, and interest of students. For example, when teaching a negotiation topic teacher might split the students in groups and within each group buyer and seller groups are created. Each group is free to choose the negotiation techniques. A class debate is organized at the end to facilitate discussions, pros and cons for applied negotiation techniques. Another example involves on-line platforms, like Kahoot for example, where teacher can define quiz to assess and guide the learning process.

VAK teaching method was created by Barbe (Barbe & Swassing, Teaching through modality strengths: Concepts and practices, 1979) starting from research emphasizing strengths of humans (visual, audio, kinesthetic and mixed). In general, one strength is dominant for each individual and thus perceptions received through this channel is boosting its' efficiency. To efficiently address all three categories of learners, teacher must include visual representations (graphs, posters, maps, figures), audio representations (repetition, summaries, stories, podcasts) and kinesthetic representations (physical activity, manipulating and touching objects) (Pritchard, 2017)

Formal classroom setting is the traditional way to provide education. *Crossover learning* is a teaching method using an informal environment, like company or farm visits, museums, botanical garden, hospitals, touristic attractions. Knowledge accumulated in the informal environment is deeper and will last longer. Learners can experiment how theory is transferred and applied in practice. All these contribute to an increased efficiency of education.

The main advantage of all the modern teaching methods is the focus on educating competent individuals able to face a continuous changing environment.

Technological development and evolution of human civilization are facilitating a new class of teaching methods, generically named as "blended learning". Blended learning is combining computer mediated activities with physical presence in the classroom. Sloan Consortium (currently rebranded as Online Learning Consortium) defines blended learning as any course where between 30 to 79% of the content is delivered online (Allen, Seaman, & Garrett, 2007). McGee and Reis consider that blended learning should not focus only on tools and environment where learning occurs, but should also refer to course roles, pedagogy, and functions of meetings. (McGee & Reis, 2012). Niemiec and Otte consider that a blended course is the integration of online with face-to-face instruction in a planned, pedagogically valuable manner and not just a combination (addition) of online with face-to-face, but a trade-off (replacement) of face-to-face time with online activity (Niemiec & Otte, 2005). Properly implemented, blended learning reach beyond the benefits of convenience, access, and efficiency. The true benefit is

in integrating face-to-face verbal and online text-based exchanges and matching each to appropriate learning tasks (Vaughan & Garrison, 2005).

Program design

Employers are looking for well-prepared graduates, owning required skills and knowledges for a specific position, but also able to move across jobs and sectors, while society is requesting for committed and responsible citizens. Globalization, technological development, climate challenges and people's lifestyle are making employers, society, and candidates more and more demanding. In this global picture, universities are a facilitator, placed somewhere between employers, society and candidates. There are opinions claiming a gap between universities and business environment regarding education and its content. Responsibility for filling this gap should be a shared task between universities and business environment, each one having a precise role in the process. Successful joint programs are presented by The Guardian (Docherty, 2014). Cooperation idea is sustained, among others, by Student Employability Index 2015 (NCUB, 2015), a study conducted by National Center for Universities and Business, showing that *"25% of the students say that there are not enough links between their university and businesses."*

SUBFLY is an applied educational program jointly designed and tested by Babes-Bolyai University (BBU) and University of South Eastern Norway (USN) under the framework of SEE Projects EY-COP-0042 and 19-COP-0042.

SUBFLY is a student-centered learning method involving students and teachers from at least two different countries. It involves one week travel for guest students and teachers to the host university. Teachers define an assignment inspired from real life situations and present lectures on the required topic to students. Company visits, interviews with business experts or personalities are organized for validating the theoretical concepts, gather new information, understand processes and organization of a real company, understand challenges from society and companies and how to deal with them. Students work in mixed groups to solve the assignment, using theoretical knowledges and practical discoveries from the applied activities. Their work is coordinated and supervised by professors. Deliverable for each mixed group is a report presented in the last day of the program.

Bringing together students from different cultures, *SUBFLY* is contributing to development of their intercultural skills and abilities to adapt, integrate, work, and communicate in a completely new environment. Solving tasks by the mixed team of students requires a combination between soft skills and theoretical competences. Generating on time, a short, comprehensive, and clear report, and an effective presentation, is a challenge for the mixed groups of students. Implementing *SUBFLY* is a challenge, but it offers a quick learning curve, opens new opportunities for all parts involved, generates a lot of fun and nice memories and on top of all improves education.

When implementing *SUBFLY* at least one interested foreign university must be identified. For creating the intercultural experience, it is mandatory to have universities coming from different cultures. The more universities are involved, the better this intercultural experience is, but also organizing challenges increase. We consider that a good intercultural experience is obtained when project is organized by rotation by each partner university, thus facilitating contact of students with different cultures.

Each university will appoint a project coordinator. Organizing cost must be considered and eventually a financing source identified. Among organizing costs, we have identified: travel, accommodation, meals, coffee breaks, company visits, social events, and fare well party.

Design of SUBFLY involves a preparatory phase and an operational phase.

In the preparatory phase, project coordinators must: *(1) agree on the calendar* – finding a proper period for all universities involved and integrate the program between other activities; *(2) decide the topic*; *(3) select the students and staff* – when deciding the number of involved students and staff is recommendable to consider the following: an efficient working group consists of 4 to 6 persons; if personalities and/or business experts are involved all students must have the possibility to interview them, thus number of students should not be too large; discrimination should be avoided when selecting the students; proficiency in English (or other agreed language) for all students involved; to have a backup in case of an emergency (for example a medical emergency) at least two staff should accompany the group; *(4) invite the partner companies/NGO/personalities/business experts* – it's recommendable to organize "company visits" , thus generating crossover learning.

When selecting the students, attention must be paid to their motivation (unmotivated students might consider the program a nice holiday abroad) and past performance (unprepared students might affect group performance).

Booking travel and accommodation is a task to be realized in the preparatory phase. Contacts between selected students and staff are recommended during preparatory phase to facilitate integration.

Operational phase starts in the moment when guest students and staff arrive at host university. It's recommended to arrive 1-2 days before start of work. This time is dedicated to social activities, thus facilitating students to know each other and to interact. It will impact the moment when students must form working groups. Examples of social activities might be visiting a touristic attraction, organize a treasure hunt, spending evening on a terrace or in a club.

During 1st day of the program assignment, timetable, requirements for the final project & presentation, some tips for interviews, and lectures are presented to students, and mixed working groups are created.

Program assignment must be presented in a clear way, such that all students understand exactly the requirements. It might be helpful to provide a short sketch/list of information related to the assignment.

When presenting requirements for the final project & presentation it's important to announce the maximum accepted length for the project (for example 1000 words, 5-10 pages), structure of the project (for example theoretical concepts, findings from interviewed companies, comparison between theory and practice, comparison between findings from interviewed companies), evaluation criteria and duration of presentation.

When interviewing personalities and/or business experts, students should be advised to prepare upfront a list of questions, designate a group member to take notes, obtain a contact from the interviewed personality/business expert for possible additional questions and permission to address them.

Working groups are created. The main requirement is to have students from all cultures in each group. Additional requirements might be added by professors (for example to have both male and female in

each group). Professors should leave the room for 15 minutes, allowing students to choose their group partners. Then professors return and if necessary, interfere to adjust groups with problems.

A first lecture is organized providing theoretical concepts useful to deal with the assignment.

It's recommendable for each group to elaborate a group contract specifying rights and obligation for each member. It is useful to solve group conflicts in case they appear.

2nd and 3rd days are allocated for lectures and activities with support partners (company visits, interviews with business experts and/or personalities). Other lectures are organized providing new theoretical concepts. For activities with support partners topic must be communicated upfront, thus they have time to prepare for discussions. In case several companies are visited it's recommendable to do it in different days, thus allowing students to debate and deeply understand the findings. At the end of activities with support partners, students are advised to write the findings as long as they are fresh. Students start to prepare the Reports. Professors allocate time for supervision and discussions with students.

At the end of 3rd day each group must register for supervision, organized during the 4th day of the program. It is more than welcomed if business experts/personalities have time to involve in supervision. Groups have the freedom to choose if they need supervision or not. If not, they must inform. In all programs implemented until now all groups have registered for supervision. Groups have the freedom to choose if they register for supervision from one or several professors/business experts/personalities and which is that.

4th day is allocated for supervision, debates, finalization of report and presentation. Deadline for submitting the reports and presentation is 20:00.

5th day is allocated for report presentation. All participant students must join presentation day. It's useful if also non-participant students are invited. Thus, they get in contact with the concept and can learn from work of their colleagues.

During presentations, everybody is encouraged to address questions and initiate debates. Reports are evaluated by professors and students from other groups. Involving students in evaluation educates them to become responsible and to respect work of their colleagues.

Attendance certificates are awarded to all participant students and the best group is awarded with a certificate of excellence.

At the end of each day is recommended to organize social activities for students. Thus the intercultural part of the program is valued.

Results

SUBFLY concept was designed and tested from 2018 until 2022. 9 programs were implemented by BBU and USN, 5 in Romania and 4 in Norway, involving 250 students, 20 professors and 8 support partners (business companies, municipality and, NGO). The first 5 programs focused on connection between business schools and business environment with the purpose of training students for real business life, while the last 4 programs focused on the concept of student democracy with the purpose of preparing committed and responsible citizens.

Samples from activities and documents elaborated during the 9 SUBFLY programs are presented in Figures 1 to 7.

Examples of assignments, timetable, and groups creation captured during programs implemented by us are presented in Figures 1 to 3.



Figure 1 – Assignment

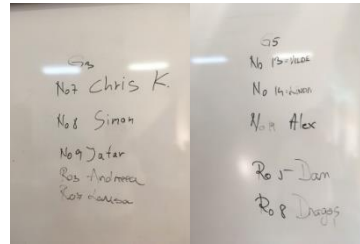


Figure 2 – Groups creation

Timetable for 1st Edition of Students Democracy (19-COP-0042)
Cluj-Napoca
27th of September to 1st of October, 2021

	Hour	Activity	Location	Persons involved
Monday	11:00 – 11:20	Opening meeting	Amphitheater	Norwegian & Romanian staff and stud
	11:20 – 12:00 12:15 – 13:00	Working groups & assignments Lecture on international culture management presented by Erik Lankut	Amphitheater Amphitheater/Zoom	Norwegian & Romanian staff and students Norwegian & Romanian students, Erik Lankut
Tuesday	9:00 – 11:00	Lecture on Democratic Systems presented by Ralf Heberling	Amphitheater/Zoom	Norwegian & Romanian staff and students, Ralf Heberling
	12:00 – 13:00 15:00 ->	Visit Cluj Napoca Municipality Groups work for Reports and social activities	Glass Room Rooms 119, 121	Norwegian & Romanian staff and students Norwegian & Romanian students
Wednesday	9:00 – 11:00	Visit CSI	Bld Muncii 12, Cluj	Norwegian & Romanian staff and students
	14:00 – 15:00 afternoon	Debate with representant of students (Business Faculty) Groups work for Reports and social activities	Room 121	Norwegian & Romanian staff and students Norwegian & Romanian students
Thursday	10:00-14:00	Debate & coaching	Amphitheater	Norwegian & Romanian staff and students
	20:00	Deadline for submitting the Project	email ¹	Norwegian and Romanian students
Friday	9:00 – 11:00	Reports presentation	Amphitheater	Norwegian & Romanian staff and students
	11:00 – 11:30 11:30 – 11:45	Certificates ceremony Program evaluation	Amphitheater on-line	Norwegian & Romanian staff and students Norwegian & Romanian students

¹ Emails for submitting the projects: isaga.luca@publiccluj.ro, ehind.fauksanger@iun.no

Figure 3 - Timetable

Pictures made during company visits and lectures are presented in Figure 4 and a timetable for supervision is presented in Figure 5.



Figure 4 – Pictures made during company visits and lectures

Timetable for coaching on Reports in SUBFLY #3
Thursday 4th of April 2019

Time	Ionut Luca	Juel	Eisa	Perry van Bekhoven
9:00-9:30				
9:30-10:00				
10:00-10:30				
10:30-11:00	Group 2	Group 3		Group 4
11:00-11:30	Group 1	Group 2	Group 4	Group 3
11:30-12:00		Group 1		

Figure 5 - Timetable for supervision

Pictures made during supervision activities are presented in Figure 6.



Figure 6 – Supervision activity

Example of an attendance certificate is presented in Figure 7.



Figure 7 – Attendance certificate

1st program was organized in Romania in autumn 2018. A total of 49 students were involved. Topic was *impact of changes on the activity of companies*. Company visits at CSI Romania and BDO Romania were organized. Challenges faced by CSI Romania when a new production facility was inaugurated, and challenges faced by BDO Romania when the HR business line was added to their portfolio were the case studies presented to students and analyzed. Seven reports were created by the involved students. The best four reports are available at <https://subfly.ro/reports/>. It was the first SUBFLY program thus organizational challenges were huge and learning curve was successfully exploited in the following programs.

2nd program was organized in Norway in spring 2019. A total of 14 students were involved. Topic was *future trends in production, storage, and consumption of energy on offshore installations*. Lectures on *New energy systems* was presented and *Optimization algorithms for energy production* were presented. A visit and debates at Sperre Industries took place, students discussing about offshore technology, trends, and performances of Sperre products. One report was elaborated by participant students. It is available at <https://subfly.ro/reports/>.

3rd program was organized in Spring 2019 in Romania. A total of 28 students were involved. Topic was *assessment of a company using business canvas model*. Students visit Color Control Services Romania and interview P. van Bekhoven CFO of Frame Rotterdam on their business model. A lecture on financial analysis and consolidation was also presented by P. van Bekhoven and another lecture on Business Canvas model was presented by Oana Gica. Six reports were generated by the participant students. The best three are available at <https://subfly.ro/reports/>.

4th program was organized in autumn 2019 in Romania. A total of 36 students were involved. Topic was *assessment of a company using business canvas model*. Company visits at CSI Romania and Double Tree by Hilton Cluj-Napoca were organized. Lectures on Business Canvas model were presented by Eivind Fauskanger and Oana Gica. Seven reports were elaborated by participant students. The best two are available at <https://subfly.ro/reports/>.

5th program was organized in spring 2020 in Norway. A total of 13 students were involved. Topic was *assessment of a company using business canvas model*. A lecture on Business Canvas model was presented by Eivind Fauskanger. A visit at Lean Laboratory from Tinus Olsen was organized and Sperre

Industries was visited. Two reports were created by participant students, both being available at <https://subfly.ro/reports/>.

The long gap between 5th and 6th program is due to travel restrictions imposed during the pandemic crisis.

6th program was organized in autumn 2021 in Romania. 29 students attended the program. Topic was *participation and representation of students in the organization of a new university*. Lectures on political sciences and cultural differences were presented by R. Heberling and E. Lankut. Students interview representants of Cluj-Napoca Municipality regarding municipality involvement in student life. A company visit at CSi Romania was planned and canceled due to pandemic crisis. Five projects were elaborated by participating students, all of them being available at <https://studentdemocracy.ro/index.php/mobility-1-ro/>.

7th program was organized in autumn 2021 in Norway. 27 students attended the program. Topic was *participation and representation of students in the organization of a new university*. Lectures on political sciences, cultural differences and motivational systems were presented by R. Heberling, E. Lankut, and A. Sofica. A company visit at Technip FMC was organized, students debating on motivational systems. Two reports were elaborated by students, both being available at <https://studentdemocracy.ro/index.php/mobility-2-no/>.

8th program was organized in spring 2022 in Norway. 28 students attended the program, and the topic was building trust in business and politics. Lectures on political sciences and cultural differences were presented by R. Heberling and E. Lankut. Students interview business experts from Technip FMC on tools used to develop and strengthen the partnership with their customers and suppliers. The four projects elaborated are available at <https://studentdemocracy.ro/index.php/mobility-3-no/>.

9th program was organized in spring 2022 in Romania, involving 26 students. Topic of the program was *restructuring of organizations and society*. Lectures on political sciences and cultural differences were presented by R. Heberling and E. Lankut. Students interview representants of Babes-Bolyai Student Organization on their activities performed to represent students at local and national level and on their involvement in society. The four projects elaborated are available at <https://studentdemocracy.ro/index.php/mobility-4-ro/>.

Results of a survey measuring satisfaction of participating students are

<i>Item measured</i>	<i>% of satisfied and very satisfied students</i>				
	<i>SUBFLY #1</i>	<i>SUBFLY #2</i>	<i>SUBFLY #3</i>	<i>SUBFLY #4</i>	<i>SUBFLY #5</i>
How satisfied are you in total with being participant in the program?	76%	100%	92%	94%	100%
How satisfied are you with social interaction with fellow students during the program?	93%	81.80%	96%	94%	44%
How satisfied are you with the visits to companies?	37%	91%	68%	94%	100%
How satisfied are you with the organization of academic activities during the program?	51%	100%	92%	81%	89%
How satisfied are you with the supervision process?	71%	91%	88%	81%	78%
How likely are you to recommend fellow students to participate in future programs?	80%	100%	100%	100%	100%

According to this survey attention must be paid to social interaction between students, academic activities, and supervision process. Percentage of students likely to recommend fellow students to participate in future programs is indicating that concept is appreciated.

Discussion

SUBFLY is combining elements from gamification and crossover learning. Assignment is always inspired by a real challenge from business environment or society. Students benefit from classroom lectures and interviews with experts, thus having the opportunity for a deeper understanding of the concepts, for a validation of theory in practice, and for discovering new topics of interest which might facilitate self-learning.

SUBFLY concept was tested for students from business schools, but it might be easily extended and adapted for students from other schools like science, medicine, engineering, with a wide variety of topics.

Besides training on specific knowledge, a major advantage of the concept is intercultural experience which might be improved by involving more universities. The downturn for increasing the number of partners is the complexity and organizational challenges.

Starting from the above-mentioned survey some improvements are considered for the concept. Lectures might be organized before the mobility using blended methods and online communication tools. Thus, some free time is created during the one-week mobility and new online educational trends are incorporated. The free time created might be allocated for more social interaction between students and for more supervision. Increased number of social activities and a better planning and organization for them can improve satisfaction of students for this item. Extended time allocated for supervision and involvement of business experts besides professors might improve quality of supervision and satisfaction of students. Considering the tight schedule of business experts their online participation in supervision can be considered.

Conclusion

SUBFLY is a modern, applied educational tool developed and tested by UBB and USN under the framework of EEA projects EY-COP-0082 and 19-COP-0042. Intercultural education is combined with training on specific knowledge. Minimum two foreign universities and involvement of companies, NGO or personalities/business experts are required. Program involves mobility of guest students and staff to the host university. This involves some travel and accommodation cost, necessary to be considered and estimated in the preparatory phase and eventually covered from university budget, external sources, or personal budget of participants. From our experience we estimate this cost at an average of 1000 euro per person, but it should be correlated with cost of living and travel distance to host country. As we showed in Discussion section, concept might be improved and adapted.

References

- Allen, E., Seaman, J., & Garrett, R. (2007). *Blending In: The extent and promise of blended education in the United States*. Boston: Sloan Consortium.
- Barbe, W., & Milone, M. (1981, February). What we know about modality strenghts. 378-380. Retrieved from https://files.ascd.org/staticfiles/ascd/pdf/journals/ed_lead/el_198102_barbe.pdf

- Barbe, W., & Swassing, R. (1979). *Teaching through modality strenghts: Concepts and practices*. Columbus, Ohio: Zaner Bloser.
- Center for the Integration of Research, T. a. (2014, March 11). *CIRTL Network*. Retrieved July 15, 2022, from CIRTL Network:
<https://web.archive.org/web/20140311181116/http://www.cirtl.net/node/2570>
- Docherty, D. (2014, May 22). Universities must produce graduates who are ready for any workplace. *The Guardian*. Retrieved from <https://www.theguardian.com/higher-education-network/2014/may/22/universities-must-produce-graduates-who-are-ready-for-workplace>
- Du, W. (2012). *Informatics and Management Science V*. London: Springer.
- Heidgerken, L. (1965). *Teaching in schools of nursing: principles and methods*. Philadelphia: Lippincott.
- McGee, P., & Reis, A. (2012). Blended course design: A synthesis of best practices. *Journal of Asynchronous learning networks*, 16(4), 7-22. Retrieved from <https://files.eric.ed.gov/fulltext/EJ982678.pdf>
- NCUB. (2015). Employability Index 2015. National Center for Universities and Business. Retrieved from <https://www.ncub.co.uk/wp-content/uploads/2016/01/Student-Employability-Index-2015-Chartwells-NCUB-Report-2015-12.pdf>
- Neeraja, K. (2011). *Textbook of Communication and Education Technology for Nurses*. New Delhi: Jaypee Brothers Medical Publishers.
- Niemiec, M., & Otte, G. (2005). *Blended learning in heigher education*. Chicago: Report from the Sloan-C Worshop on Blended Learning.
- Pritchard, A. (2017). *Ways of learning. Learning theories and learning styles in the classroom (4th edition)*. New York: Routledge Taylor & Francis Group.
- Rodriguez, V. (2012). The Teaching Brain and the End of the Empty Vessel. *Mind, Brain, and Education*, 6(4), 177-185. doi: <https://doi.org/10.1111/j.1751-228X.2012.01155.x>
- Teach.com*. (2022, July 15). Retrieved from <https://teach.com/what/teachers-know/teaching-methods/>
- Tinzmann, M., Jones, B., Fennimore, T., Bakker, J., Fine, C., & Pierce, J. (2012). *What is the collaborative classroom*. North Central Regionla Educational Laboratory. Oak Brook: North Central Regionla Educational Laboratory. Retrieved from <https://web.archive.org/web/20120627043611/http://www.arp.sprnet.org/admin/supt/collab2.htm>
- Vanaja, M. (2004). *Methods of Teaching Physics*. New Delhi: Discovery Publishing House.
- Vaughan, N., & Garrison, R. (2005). Creating cognitive presence in a blended faculty development community. *The internet and heigher education*, 8(1), 1-12. Retrieved from <https://doi.org/10.1016/j.iheduc.2004.11.001>