

StartIT methodology short description

StartIT Consortium

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Contents



Methodology, short description

The goal of the method is to increase the level of soft and future skills in participating students. The method is based on MIMI (Multinational, Intercultural, Multidisciplinary and Intensive) methodology described in [Dowdall et al., 2021]. The method is dedicated to disciplinary groups of students who in small teams take part in intensive project. The teams are required to prepare a prototype of a modern web/mobile solution in a small (up to six members) team. The groups of students are supported by academic staff members called Mentors.

Participants

The goal of the methodology is increase of future and soft-skills in participants. The main participants are the students who will gain new skills and social competencies. The support group in the proces are mentors, who observe and help the participants in the process. Both of this two types of people are crucial in the methodology. Let us discuss both groups in details.

Students

In order to increase participants' communication and social skills the group of students should be diversified. We propose that the participants should represent different fields of study as well as different nationalities and cultural backgrounds. In this way we will have interdisciplinary and multicultural group of participants. The work in interdisciplinary and intercultural group put high demand on empathy and communication skills. In the method the students are divides in small teams (up to 8 members). Each team is asked to work on mobile or web application connected to the theme of the event. The themes used in StartIT are stainability and green society. The group have to prepare the prototype of the application as well as present business potential assessment of the proposed solution. Therefore, the team should have some members with IT development skills and management and business competencies. Moreover, as the task for the team is to create a new solution (application) a high lever of creativity is required. This mean that a person that represent any field of study can have an important impact on the group and the outcome. The innovations require an open mind, a broad spectrum of interests and a lot of empathy, so there is a place for students representing many different disciplines. The creativity is not connected with any specific field and synergy usually create a new interesting solution.

Mentors

The methodology is designed mainly for students, but as all didactic events needs people who can track the process and help the participants. These people we call Mentors. The mentor is responsible for tracking if all participants can obtain the right results. Each team is appointed with a mentor who is a staff member from one of institutions taking part in the event, usually it is an academic teacher. The mentor should not lead the mentored team. The mentor should take the role of critic, moderator or adviser that can show the team different perspective or point the problems that the group neglected. As the group of participants is diverse the team of mentors should represent different areas. Therefore, the team of mentors should cooperate closely. That means if a team need support of a specialist in different field that their mentor represents, the mentor suggest them to contact other mentor with required competencies. The group of mentors should cover all aspects relevant to the project, from technical, business, and management to presentation and communication skills. What is crucial, in the methodology, that the groups of students do not take part in any contest. Therefore, it is very important for all the teams to achieve predicted didactically goals and the prototypes of the teams should not be compared and given any marks that suggest any order like better-worse outcome. The teams should cooperate and spread good practices between students groups and mentors.

The event

The main element of the methodology is a 10 days event. All the participants work intensively in that period. During the event we create the groups, the groups define their idea and prepare the outcomes. No pre or post event work is required. However as the outcomes comply creative commons license the prototypes can be developed further, but this is out of scope of this methodology.

Draft of a schedule

The event is very intensive and need to be organized. In a short time, participants have to divide into teams, design an idea for a game or application, build a prototype of the idea. Here we can present basic drafts of a schedule (Table 1).

The first day (D1) is devoted to team building. In the opening meeting, participants are informed on the theme of the event and some basic organizational issues like rules, schedule, etc. We use some short ice-breaking activities to help students to get to know each other. The students are told to build interdisciplinary teams. We can add some rules on team structure. In our case, it was not allowed to have two persons from the same participating institution in a team. Students should cover diverse roles in the team, so a group containing only programmers is not allowed. We can strengthen the team-building process by some kinds of activities like city games, bowling or another activity that allows participants to freely move between groups of people, on the other side all participants should stay in the same area. The quality of the team-building process can have an impact on team integration as well as on the quality of the teams. In this day we conduct also all planned pre-surveys that will help us to measure event outcomes. During the day we plan a few (three or four) short interactive talks, we call them TED talks. The talks are selected according to the needs of the project. Exemplary topics are: brainstorming, apps development process for non technical, team work or business potential assessment. The aim of the talks is in one hand to introduce the problems that will arise during the project. On the other hand the TED should be interactive to increase interest of the participants in the topic.

The next day (D2), teams spent on brainstorming and building the first idea of a app within the theme of the event. Teams should decide what the prototype they plan to create. Make a brief analysis if they can produce it during the event, decide who is the target group of the app, and roughly identify stakeholders. At the end of the day in the day, the teams present the first idea of the game (see Section). After the presentations the staff of the project decide how to assign mentors to the teams. We can take the competencies of the members of the team mentor into account, as well as the predicted needs of the team.

At the beginning of day three (D3), teams are informed about their mentors assignment. From this day, teams start to work on the idea of the app, build their prototype and its content. Some members should start work on a business assessment. This is also the first day when mentors start working with groups i.e., discussing with teams the app ideas and other issues connected to the task and teamwork. In the evening we can organize some workshops or invited speeches, but they should be short.

The students continue work on the prototypes in next days (D4-D8). In D4 we organize 'Country presentations', the students from each country present their institution/city/country

Phase	Day
D0 [Sunday ¹]	Arrival and accomodation
D1 [Monday]	Opening of the event Presentation of the theme of the event Pre-survey Ice-breaking activity Interactive TED talks Team selection
D2 [Tuesday]	Teams work on idea The first presentation of ideas
D3 [Wednesday]	Appointment of mentors Teams work on game ideas If need short workshops or invited speach
D4 [Thursday]	Teams work on game ideas Country presentation
D5 [Friday]	Teams work on game ideas Second presentation about actual stage of the groups
D6 [Saturday]	Morning: Work in groups Morning: Support sessions for teams
D7 [Sunday]	Free time
D8 [Monday]	Teams work on game ideas
D8 [Tuesday]	Final presentation Post surveys Closing ceremony Reception
D9 [Wednesday]	Travelling home

Table 1: Draft schedule of the main event.

to the others. This can increase future student exchange as well as increase multicultural understanding. The presentations are short, usually 10 minutes per country, and are prepared before arriving to event venue.

On day five (D5) we organize a second round of presentations.

As day sixth is a Saturday, we usually plan to work up to lunch time and later students have a freedom what to do. In that day teams already know if they lack of some competencies. Therefore, we can arrange Support sessions. This are short workshops organized like Q&A sessions with selected representatives of team mentors. The groups should identify their needs and we identify issues connected with more then one team. The workshop allow to solve many pending common problems faster, not individually for each team.

After the presentation on day fifth, many weaknesses of team ideas are identified, the next days teams spend working on wrapping up their prototype and business plan. At this moment, teams usually pass through moments where they are in low spirits, feel tired and lost. Then the help of a mentor is crucial.

The participants have a day off on Sunday (D7).

Day eight (D8) is a dedicated to preparation for the final presentations. Teams can train their presentation.

Day ten (D9) is the final day. We usually plan to organize final presentations before lunch. After the presentation, participants, mentors, and observers can discuss the result. The best is to organize lunch like a buffet where people can eat and move around talking. This allows students to get additional feedback on their presented solutions. After lunch, participants have free time, the mentors and organizers should assess the event. The participants should fill all required post-surveys. In the evening we suggest organizing a social event, this can take the form of a farewell party.

Remark

The first and the last days can also be used for questionnaires/surveys organized by the mentor team to collect data on the perception of the participating students on the event, and to collect all their work (code, graphics, schedules, etc.). Moreover, we conducted to do everyday short surveys in order to measure progress of the project. The students respond to questions connected with their work in the previous day.

Presentations

We can distinguish three times when teams present something during the main event. Here we describe each one independently.

First presentation - day D2

The first presentation is usually the shortest one. Each team has to create a few slides (up to five). The team has to present the team members and the idea on one or two slides (like an elevator pitch). The show of one team should take up to five minutes. After each team presentation, anybody from the audience can ask questions. In the audience, we have all participants, mentors, organizers, and some external experts. One of the organizers or mentors should take the role of the moderator. It is important that mentors and organizers should be critical if the idea of the team is weak. The teams still have the time to change or rethink their ideas to make them better. It happens that the first ideas are too optimistic or too simple.

Remark

Beginning from the first presentation, mentors should demand that all team members have to take an active role. It is natural that some of the team members are shy and prefer not to be on stage. The main idea of the approach is to develop/train the presentation and soft-skills in participants.

Country presentation - day D4

The participants came from different institutions and countries. The students from each institution should prepare short (8-10 minutes) presentation about: their institution, their country, culture. The project is co-founded by Erasmus Plus and spreading knowledge about different countries allow the increase of multi-cultural understanding in European society. The presentations are prepared in institutional teams before they arrive to the venue.

Second presentation - day D5

The second round of presentations allows to assess if the group is going in the right direction. Each team has 8-10 minutes to present. All teams have to discuss: the team, the idea of the app, the need that the app solves, the target group, the technology, and technological solutions, stakeholders. Teams can omit more details like results of project assessment (canvas/swot analysis). The audience is the same as during the *First presentations*. One of the organizers or mentors should take the role of the moderator.

¹As ten days have to span across a weekend, let us suppose the teams arrive at the venue place on Sunday, this makes no significant impact on the project. Just shift a free day - Sunday.

Final presentations - day D9

The final presentations should have a form of an official open ceremony. It is advisable to have as many external guests, experts as possible. Each team should have 8-10 minutes to present. The presentation should be treated as a presentation of an idea for future investors. The presentation should cover the team, the idea of the game/app, the need the game/app solves, the target group, the technology, and technological solutions, stakeholders, business potential analysis, some kind of prototype demonstrations. Prototype demonstration can take the form of a live demonstration (not advisable) or film. Very often, teams present something like 30 seconds advertising film. The moderator of the happening should not be a mentor of any team. The number of questions should be minimized, priority given to questions from guests and external experts. However, no team should be left without feedback, and so if there are no questions, someone from mentors should ask a question or give a remark.

Social events

The social activities are typically supplementary to the event. We must don't forget that those activities may be crucial for the integration. The contributors need to work collectively below high strain and reign of time. Therefore, the quicker crew integrates, the higher results may be completed. In the undertaking, we commonly arrange two social activities - at the start and at the end. The latter may be handled as a reward for the participants for completing the project. The former team-building social event that happens on the begin is crucial and has an effect on the venture and its effects. On the first-day, we need to enforce the participants integration. We advise to prepare first day activities in two elements: first introductory and all participants integration, later activities that put in force teaming up and group stage integration. In the start, we make use ice-breaking approach. After that, we are able to moderate integration the usage of any techniques of social integration video games in smaller corporations. We can prepare a few tours of 0.5 - 1 hour integration games in a one of a kind division into smaller groups. In this way, we will introduce participants to each other. Later we ought to allow participants to freely team-up. We advise the second one element (teaming up) can happen in the evening in the form of sport-based sports. We advocate sports activities like bowling, billiard/pool, darts – the games you could play in a group, flow among teams and speak. For that cause, most of the activities in a swimming pool and outside are tough practice right here.

As the teams ought to contain representatives with a complementary set of competencies, the crew-up system need to be supervised. In our case, we frequently observe some extra regulations.

Teamwork and mentoring

This chapter is devoted to groups and the teamwork in the groups that lead to final results.

The team

A team in our project has a well-defined task: to create an idea of mobile or web application within a given theme. The solution must be assisted with a prototype. Moreover, the idea must have some commercial potential. Therefore, it has to have a well-defined target group, stakeholders, a basic version of a business plan. We can look at the team as a team that creates a start-up. We can define the competencies that such a team should have in order to have success potential. The competencies are:

- technical skills – connected with mobile app development,
- business assessment skills – the team have to be able to prepare at least swot/canvas analysis,
- graphical skills – the team should be able to create a basic graphical design,
- storytelling – a game/app should have some content. The same can be said about presentations,
- leadership – the team needs a leader,
- organization skills – help to organize work in the team,
- entrepreneurship – the team should try to invent something unique.

The first two skills are strictly connected to the study domain, the rest are more personal competencies and cannot be connected to a specific study programme.

Teamwork

The team has to organize the work for itself. Some basic iterative - agile approach is recommended. Every third-year computer science or management student should have basic knowledge in this area. In the project we work not only interdisciplinary but international students, the communication within the team, can be very demanding. Some small intercultural misunderstandings are to be expected. However, the team works in a strict time regime as well as stress, the presentations are official, and usually none of the team members presented in front of numerous audiences, moreover it is expected that some of the participants are shy, have a low level of self-confidence, etc. Every member of the team have to take active role in the team, and have to be actively engaged in all team presentations.

As was stated, the team has to be a self-governing one. The team has an additional, if not one of the most important, task: use the potential of every member effectively in order to achieve the best results.

Mentoring

The role of the mentor cannot be neglected in the project. The mentor assists a group but should not drive the team. On the one hand, the mentor has to advise the group and help in solving their problem. On the other hand, the students have to learn to take a leading role in the real project. This can be argued if it is better for the team to fail but learn something or have success but act only passively so could not learn anything. The mentor has to strike a balance. When the team works on their own idea, feels connected to it, and works more effectively. Sometimes the idea has important flaws, and the team should not proceed. Then the mentor should try to convince, not enforce, the team to modify the idea. The mentor is not alone in that. Other mentors can and should suggest modifications during the first or second presentation.

Teamwork always has a human factor. In the team, during the project, we can expect some tensions and heated arguments. It cannot be prevented. For example, one strong personality can overwhelm the rest of the team or fight with the rest of the team. The team and mentor have to solve all such issues.

Didactic outcomes

The main reason to organize the StartIT-like project is connected with its didactic outcomes. The full analysis of the didactic potential of such projects can be found in scientific articles given in the bibliography. Here let us collect all the identified outcomes with some reasoning.

Domain competencies

All the participants have a set of domain competencies connected to their study area. During the project, they usually apply these skills in real projects and real problems. This allows participants to train and further develop them. For example, computer science students train their technical development skills. Management students can use their business planning competencies, and so on. In this area, the growth of domain competencies is very similar to any problem-based model. However, as the projects are students' own ideas, they will feel more eager to solve all problems, and so learning is much more interesting for participants. If in a project/team we have students with different levels of area competencies, we can observe that one student teaches the other. This behavior is very welcome and should be recommended.

Soft-skills

The project is mainly focused on soft-skills development in participants. As we know the soft competencies cannot be taught in class during lectures or even discussions, they have to be trained/developed during a real experience. Therefore, the soft-skills are very hard to be built in classical education. The team-based projects are an excellent playground for this. As we propose to have international and interdisciplinary teams, the students have to communicate. An so all the skills needed in intercultural communication have to be used if the team wants to fulfill their goals. We distinguished a few important elements that happen in the project: *Teamwork, Idea Creation, Work on Idea, Presentation, Communication in the team, Work on Goal*. For these, we can build a basic competencies matrix (Tab. 2). These competencies are needed and used in the activities that happen when a team works on the idea during the project.

<div style="text-align: center;"> Skills \ Activities </div>	Teamwork	Idea Creation	Work on Idea	Presentation	Communication in the team	Work on Goal
Active listening			X		X	
Analysis		X	X			X
Brainstorming		X				
Clarity		X	X	X	X	
Conflict management	X	X				X
Constructive feedback						X
Cooperation	X		X		X	
Critical observation		X				X
Cultural intelligence				X	X	
Curiosity			X			
Empathy	X			X	X	
Idea exchange	X		X	X		
Imagination	X	X		X		
Initiative	X			X		
Innovation		X				
Logical reasoning			X		X	X
Non-verbal communication				X	X	
Open-mindedness	X	X	X		X	X
Optimism		X	X	X		X
Planning	X					X
Prioritizing	X		X			
Public speaking				X		
Self-confidence		X		X	X	X
Stress management	X					X
Verbal communication					X	

Table 2: Soft competencies matrix for activities in project

Summary

The methodology description is created to help everyone who would like to create a project like StartIT. We have tried to describe the methodology and its requirements, work-flow, and outcomes. We hope that anyone can find this useful in the application proposed methodology in their own activities. The most obvious recipients of the methodology are academia-type schools. This can be applied to secondary-level schools or companies.



Appendix 1: Intellectual property issues

Every project connected with intellectual property need to take copyrights into account. The project is co-funded by Erasmus Plus and the outputs should be open for everyone. Therefore, we decide that all elements presented and created within the project should be accessed without restriction. All outcomes should be created according to one of open-source forms. We present here a basic version of rules associated with the project.

Intellectual property rules

Rules of StartIT:

1. All presentations given during the event may be recorded and used by StartIT consortium members (listed below) for didactical and promotional purposes.
2. All game prototypes have to be released on MIT License defined bellow or Creative Common license.
3. All group members have to be included as authors/creators and copyright holders in the license of the prototype developed by the group.
4. All StartIT consortium members have to be added as institutions and copyright holders in the licenses of all prototypes developed during the event.
5. In case of continuation of the work on any of released prototypes after the StartIT event the rules of participation and intellectual property rights have to be defined individually for each case. The StartIT consortium is not responsible for such continuation projects.

MIT License (<https://opensource.org/licenses/MIT>) is defined as follows:

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- Uniwersytet Łódzki, Łódź, Poland

Appendix 2: Anti-Bulling and harassment policy

In project with so diverse and intercultural structure, some not proper behaviour can happen. Thus, we are using a set of rules that each participant have to follow.

1. StartIT project is committed to standard human rights and obligations, which stand for respecting the dignity of all humans. That is why we, as the project's partners, commit ourselves to fight against all types of discrimination.
2. The project partners believe that bullying and harassment pollutes the learning and working environment and has a detrimental effect upon the wellbeing and health of those affected by such behaviour. We partners are committed to creating a working and learning environment free from bullying, harassment, and discrimination in which all are treated with dignity and respect. Dignity and respect are everyone's right and everyone's responsibility. Therefore, a respectful and appreciative contact with each other is our standard, which applies to every participant to the project equally.
3. Please be mindful of the cultural norms and customs of the host country and avoid using language or terminology that may be considered offensive or disrespectful.
4. The project partners take a zero -tolerance approach to all forms of discrimination, bullying, harassment, and violence which means that all allegations of discrimination, bullying, harassment and violence will be dealt with. Where appropriate, the participant may be required to interrupt their activities and leave the project.
5. WHAT TO DO?
In case you feel you are being bullied, harassed, or discriminated against, or if you feel the need to talk to someone, feel free to get in touch with the any of the instructors/coaches from the project. If you would like to submit a message anonymously, please drop us a note in the feedback box. You can find the email addresses of all staff on the Moodle website.

Definitions

For the purposes of this anti-bullying charter, the following definitions shall apply:

1. Harassment
 - (a) By harassment we mean any unwanted conduct that has either the purpose or the effect of violating a person's dignity or creating an intimidating, hostile, degrading, humiliating or offensive environment for them .
 - (b) Harassment that is targeted at an individual or group of individuals may occur on the grounds of:
 - A person's actual personal characteristics – e.g., a person's views are persistently ignored or not sough t because they have diagnosis of mental ill health

- A person's perceived personal characteristic – e.g., homophobic/derogatory remarks are made to a person assumed to be gay, whether they are or not
 - The characteristic of a person with whom someone is linked – e.g., a person is harassed because of the religious or philosophical beliefs of a relative or friend
- (c) Alternatively, harassment may not be personally targeted at an individual at all. For example, if, in a particular team, a culture exists which permits offensive or stereotypical jokes, then a person may have a valid complaint of harassment, even if these do not relate directly to the complainant.

2. Bullying

- (a) By bullying we refer to any unwanted aggressive behaviour(s) by another youth or group of youths that involves the exercise of power over another person and is repeated multiple times or is highly likely to be repeated. Bullying may inflict harm or distress on the targeted youth including physical, psychological, social, or educational harm, undermining them personally and/or professionally.

3. Discrimination

- (a) By direct discrimination we refer to any situation where one person is treated differently as another is, has been or would be treated in a comparable situation based solely on a person's actual or perceived personal characteristics.
- (b) By indirect discrimination we refer to any situation where an apparently neutral provision, criterion or practice would put persons at a particular disadvantage compared with other persons, unless that provision, criterion or practice is objectively justified by a legitimate aim, and the means of achieving that aim are appropriate and necessary.



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