DEMETER PROJECT

Thematic Learning

Guideline

Introduction

The following Guideline is intended to support educators in the creation of Thematic Learning projects integrating several subjects. As a Guideline it is, first and foremost, intended to aid the educator in the relatively complex organisational task of setting up and managing Thematic Learning projects of varying sizes. Section 1 of this Guideline is consequently devoted to the more organisational aspects of running a Thematic Learning project. This section draws heavily on the direct experiences from the Erasmus+ project DEMETER, as well as from other earlier collaborative projects. Section 2 of the Guideline is focused on the methodologies used within Thematic Leaning and how these methodologies can be integrated with the organisation of the project. This section, which is founded on research literature, is annotated for your convenience, and should provide the educator with ample scope for further research into Thematic Learning methodology.

Background information

During the period of 2019 – 2022 a project named "Developing Enhanced Methodology for Thematic Learning in Education using Real-world problem solving" (acronym DEMETER) was conducted by a transnational group of upper secondary schools in Croatia, France, Spain, and Sweden, under the auspices of the European Union programme Erasmus+. The project ran as a Strategic Partnership for school education (Cooperation for innovation and the exchange of good practices). The DEMETER project had as a general aim to develop and enhance the use of Thematic Learning primarily within Upper Secondary school education in order to promote interdisciplinary co-operation in Science, Technology, Engineering, Arts and Mathematics (STE(A)M-subjects), as well as in other subjects, e.g., Social Sciences, History, Geography, Economy and Languages. The rationale for the project was grounded in the enhanced educational possibilities offered by Thematic Learning embedded in the digital era.

Within the context of the project, Thematic Learning was defined as a method of education where student/teacher educational activities, within several disciplines, were focused on one specific theme. The theme was used as a vehicle by the educator to teach several concepts. Consequently, a variety of subjects and techniques (e.g., Computer Aided Design, Additive Manufacture, Electronics, Programming, Web design, Computer Numeric Control-machining, Metalworks, History, Political science, Law, Art and design, Geography, Ethics) was included, in addition to more theoretical aspects of STE(A)M. What pertains to the latter; by offering the students a relatively complex technological design task within the theme, involving a high degree of problem solving and cooperation, the students was placed in a learning environment conductive to real-world application of theoretical knowledge.

DEMETER was dedicated to Thematic Learning with the nominal student theme being the problem of landmines as well as the associated human, economic and social costs, thus raising awareness of a global problem and promoting humanitarian values. The theme had special relevance since one of the partner countries (Croatia) suffers from substantial landmine contamination. Within the framework of the theme of the problem of landmines in Europe and globally, students were also given the further task of designing and developing a remotely controlled "proof of concept" vehicle for landmine detection (Mine Detection Rover). This technologically advanced assignment was introduced to capture the imagination of the students, by both its use of modern technology and by offering a challenging arena for experimentation and "hands-on" real-world problem solving. The work of the transnational student groups at the different partner schools culminated in the production of four tracked vehicles (Rovers) weighting in at approximately eight kilograms each, capable of terrain movement and equipped with a state-of-the-art metal detecting sensor. The Rovers are wirelessly and remotely piloted from a laptop computer and provide the operator with a "first-person-view" through its integrated camera system. Mine detection data from the sensor is also transmitted to the operator and sensor calibration can be controlled by the remote operator.

Participating educators provided leadership, experience, and knowledge from both general, as well as more technical, subjects. The method of Thematic Learning thus offered the possibility for interaction between several educational subjects in real-life settings, as well as providing the students with ample opportunities for work-based learning in conjunction with an entrepreneurial approach.

Section 1

Selecting a theme for the project

The first step down the Thematic Learning project road is, unsurprisingly, to find a theme around which the project and all its activities will be centred. The DEMETER project used the following stipulative definition of Thematic Learning:

By thematic learning we mean a method of education where student/teacher educational activities, within several disciplines, are focused on one specific theme. The educator uses the theme as a medium to convey a number of ideas.

Within the framework of the DEMETER project the nominal core activity of the project became, as already stated, the problem of landmines as well as the associated human, economic and social costs. Careful consideration went into the choice of theme for the project. The problem of landmine use and its associated humanitarian costs was felt to attract the interest of students and educators alike. The theme also had the ability of sustaining interest over time, i.e., for the entire duration of the project. Classroom activities centred on the global landmine problem offered the opportunity to integrate several educational subjects within the social sciences, as well as art and languages.

Since the transnational partnership within DEMETER was composed of upper-secondary schools with a strong presence in technology and VET, one activity area within the theme became the development of an artifact, or physical product, in the form of a remotely piloted land vehicle with mine detecting capability. The design and the development of a tracked vehicle (Mine Detection Rover) offered ample opportunities to integrate both STEM- and VET-subjects into the classroom work process. The development task included, *inter alia*, electronics construction, advanced programming, CNC-machining, CAD, additive manufacture (a.k.a. 3-D printing), mechanics and metalworks. Theoretical concepts of the design were tested and demonstrated in the physics classroom.

The advanced task of Rover design and development captured the imagination of the students. Furthermore, the task provided the students with an environment of "hands-on" practical application of theoretical STEM knowledge. The complexity of the tasks related to the development of the Rover quite naturally led to a series of technological and practical challenges which required a high level of cooperation between students as well as staff. The complexity was a deliberate feature in the DEMETER project design. The practical real-world problem solving necessary to overcome frequently appearing obstacles, fostered the students to adopt an entrepreneurial solutions-orientated approach in the classroom environment. Constant experimentation and test, in order to find solution to technical and other problems, posed stimulating challenges that served to maintain the interest of students and educators alike during the entire life cycle of the project.

All in all, the skills and knowledge developed within the project fitted well into the partners schools' different curricula. At the same time, it gave the partners the opportunity to engage in

dynamic skills- and knowledge development. Despite the complexity of some of the tasks within DEMETER, it was deemed that the partnership together could muster the necessary educational competencies necessary for collectively the guiding the students throughout the project.

As previously said, the selection of the theme for your project is a first, and crucial, step in the development of your project. The process around theme selection thus deserves special attention, since it has wider implications not only for the project´s general organisation, but also for the pedagogics and didactics involved. Consequently, the aspect of theme selection will receive further attention in Section 2 of this Guide and Manual.

Takeaways – The theme should:

- capture the imagination of the students and must be able to sustain interest over time

- offer opportunities to integrate several subjects

- offer the application of theoretical knowledge, together with practical skills

- provide an arena for cooperation between students and educators alike

- give ample opportunities for real-world problem solving

- fit in and promote the curriculum

- contain tasks that are challenging enough to excite the student´s curiosity, imagination, and inventiveness

- fit the competencies available or attainable at the involved educational institution(s)

Sizing the project organisation

The DEMETER project had a quite large organisational structure, or size, due to its transnational character involving upper-secondary schools in Croatia, France, Spain and Sweden. There is however nothing that says that a Thematic Learning project must be run in an international context. The methodology can equally well be applied to a project involving a singe group of students, one school, between local schools or between a number of educational institutions within a nation´s borders. The project´s size is thus fully scalable according to your requirements.

Organisational size is here equalled with the number of participating educational institutions, educators, and students. As with most things, there is a trade-off involved in project size. It is, firstly, the relationship between project organisational size and project management complexity. A smaller scale project is substantially easier to run than a project involving several educational institutions and hundreds of students in different countries. A large project requires substantial efforts what regards project leadership and administration, i.e., calls for a high degree of organisational capability.

Secondly, there commonly exists a correlation between organisational size and the need for financial resources, i.e., economic cost, unsurprisingly, tends to increase with the size of the project organisation. Even when more "tacit costs" like opportunity costs for educators et. c. is discounted, the larger project, quite naturally, proves more economic resource intensive. This is, however less of a problem when participating schools work as equal partners and consequently pool their resources and share costs. In addition, large projects usually attain economies of scale. Additional overhead costs are however incurred if the project requires cooperation between geographically separated educational institutions. For instance, the need to travel for necessary project meetings and eventual in person student-to-student cooperation, will rapidly add substantial cost to the project, especially if it is carried out transnationally. This later aspect of the cost/size correlation serves as a limiting factor in the organisational sizing of the project. Therefore, large project organisation, involving geographical separated participant, presupposes educational institutions with substantial economic resources, or perhaps more realistically, some form of external co-financing. Here Erasmus+ is a case in point.

Thirdly, there is a relationship between project organisational size and attainable/potential project quality. A larger project normally encompasses more people and consequently have more differentiated talent available, both in terms of educators as well as students. For instance, the highly advanced STEM tasks within DEMETER would have been impossible to realise if the project had involved a single school. DEMETER came, as a partnership, to encompass talented educators and students specialised in, *inter alia*, advanced programming, CAD, 3-D printing, electronics engineering, CNC-operation, mechanics, and general industrial workshop – all areas of expertise that one single school couldn't cover. The same can be said about the competencies available for the tasks and activities involving subjects within arts and the humanities/social sciences. Consequently, the project came to enjoy

substantial economies of scale what pertains competence and expertise. As a results of this, more ambitious Thematic Learning tasks and objectives could be set for the project. In addition, since DEMETER became transnational in its scope, other subsidiary goals like cultural understanding, developing a European identity, working in a foreign language et. c. was also attained by participating educators and students.

Fourthly, there also exists and relationship between project size and the availability of educational infrastructure. A larger project would have several participating schools that could make already existing resources, in the form of educational spaces, machinery and other equipment available for the whole project partnership. In the case of DEMETER, these economies of scale gave the project impressive joint access to varied educational infrastructure in the form of teaching spaces, materials storage, conference venues, workshops, laboratories, tools, and machines for manufacture – all already present within the different partner schools. In analogy with the above, one single school could not otherwise have had access to the floor space, advanced machinery and equipment required by the project.

Takeaways – Be aware of that:

- Thematic Learning is organisationally "scalable". It can be run with a single group of students, one school, between two or more local schools, between different schools within a nation's borders, or as a transnational project.

- the chosen organisational size of the project affects the complexity of project management. A smaller scale project is substantially easier to run than a project involving several educational institutions and a large number of students and educators. Management complexity will further increase if the project is made transnational.

- organisationally larger Thematic Learning projects, quite naturally, proves more economic resource intensive than smaller ones.

- joint projects should be undertaken as equal partnerships and costs should be shared.

- projects with geographically separated partners, e.g., transnational partnerships, can incur added, and substantial, overhead costs for travel.

- there exist opportunities for external co-financing, e.g., Erasmus+, for projects that involves transnational partners.

- an organisationally larger project usually has higher attainable/potential project quality, since it encompasses a larger group of people with differentiated talents and expertise, allowing more advanced tasks to be undertaken and more ambitious goals to be set.

- by making a project transnational in its scope, other subsidiary goals like cultural awareness, promotion of language skills et c. can be attained.

- an organisationally larger project has a correspondingly greater access to varied educational infrastructure e.g., teaching areas, meeting venues, machine equipment et c., since infrastructure assets could be shared between the partners.

The role of project leader

A clear leadership structure is of course necessary for the project. The person chosen to lead the project is often, but not always, the person who took the initiative to start the project planning process. In any case, the role of project leader is a demanding one. As stated above, the workload of the project leader increases with the organisational size and, thus, the complexity of the project. A transnational project like DEMETER, conducted under the auspices of Erasmus+ and encompassing four schools in different countries, required the additional allocation of administrative specialists like a European activity's coordinator, accountants et. c., to support the project leader. A smaller project will generally require less operative capacity, but the workload of the project leader will still be relatively heavy. In order to handle the great variety of duties that befalls the project leader, he or she should be something like a generalist, with a good general knowledge base of the topics of the thematic, without necessarily being a specialist in all technical or other aspects of the project. The project leaders' supreme task is to manage the project and its resources towards attainment of the project's objectives within the set timeframe. The greatest resource that the project leader has at his or her disposal is the human capital contained within the project. With a wisely chosen project team of motivated, resourceful, and competent educators (see below), the project leader is able to avoid micro-management and the associated managerial myopia that usually occurs when the project leader feels forced to participate in every decision, down to the smallest details, of the work process.

The project leader should instead endeavour to adopt a leadership philosophy that could be described as "directive control". Directive control give project members the freedom to themselves find out solutions to project-related tasks. The project leader sets goals, priorities, and tasks, either directly or through the project plan (see below), and the project team will, as dedicated and resourceful professionals, work out the solution needed for their attainment. The project leader is consequently free to allocate resources to the educators and act as a facilitator. However, strategic decision-making remains with the project leadership, after consultations with the project team.

Directive control does not, however, free the project leader from the need for constant monitoring of the project, even down to a quite detailed level. It is up to the project leader to early on identify any potential bottlenecks in the process, foresee possible upcoming issues and ascertain that project objectives are met in time. The project leader thus become the project's problem solver, to whom the team turn to when their own work process gets blocked by arising issues and they lack the resources to resolve them. This places additional demands on the project leader. Often the problem solving must be "on the go" with little time for decision-making or guidance. Since we live in a dynamic world, smaller and larger hang-ups and issues not only can, but will, occur all the time during the project life cycle. The responsibility for finding solutions finally rests on the project leader.

The project leader's more general role as a facilitator will constitute a major part of his or her job. Facilitation here involves logistics, i.e., assuring that the educators get the materials,

tools, educational spaces, and other resources that the educators need when realising the project. In this context the project leader allocates common project resources and is engaged in procurement of goods and services needed for the work in progress. This, subsequently, means that the project leader also has responsibility for the project budget. This adds additional tasks for the project leader, e.g., handling of payment routines, managements of invoices and verifications and interaction with the educational institution´s accounting department. If the project is co-financed by external sources, he or she also is responsible for reporting project progress to these external sources and to other stakeholders.

The many tasks of the project leader may seem onerous, but working in a dynamic environment, guiding dedicated professionals towards the fulfilment of advanced goals is indeed most rewarding and more than compensate for the workload.

Takeaways – The project leader:

- have the prime task of managing the project and its resources towards attainment of its objectives within the allocated timeframe.

- have the human capital contained within the project as his or her most important resource.

- sets goals, priorities, and tasks, either directly or through the project plan.

- should avoid micro-management but need to constantly monitor the project process in detail.

- should give project members the creative freedom to themselves find solutions to project tasks.

- is the project´s chief problem solver which the team turns to if occurring problems block the project process and their problem-solving resources are insufficient.

- should identify any potential bottlenecks in the project process, try to foresee upcoming issues, and make certain that project objectives are met on time.

- has a more general role as facilitator; a role which e.g., covers logistics, resource allocation, the procurement of goods and services, as well as budget management.

Setting an organisational structure and forming educator teams

Whether you choose to launch a project involving just a small group of educators and students or a transnational project covering several educational institutions, you need a formal organisational structure. Using DEMETER as an instructional example, the participating educators at each partner school were organised into five-to-six-person local project "Core Teams". Membership of these Core Teams where constant, but the teams had the liberty to draw in additional competency from the outside when necessary. Each team had an appointed Local Project Coordinator which represented the local Core Team *vis-à-vis* the overall project leadership.

Since DEMETER contained four participating educational institutions, the project was organised around four national Core Teams under the project leadership. This simple organisational structure allowed for relatively easy management, an intuitive "chain-of-command" structure and streamlined information flow through the project. Furthermore, the organisational structure lent itself well to a relatively advanced division-of-labour. Even if the theme of the project was selected to fit the collective competencies available at the involved educational institutions, these competencies were not always evenly distributed across the partnership. Consequently, the main responsibility for individual project tasks were allocated to the institution deemed to have special skills and resources in the relevant area. This is not to say that a specific Core Teams became totally specialised in a single area of the project. The accent here was on responsibility for project tasks, not on extreme specialisation since this could become detrimental to the more cooperative aspect of the project. Consequently, there existed substantial overlap in competencies within Core Teams, as well as in between Core Teams.

What pertains overlapping competencies between different Core Teams, this can significantly contribute to a project resilience against what can be termed "uncontrollable external events" e.g., in the case of DEMETER, a global pandemic with far-reaching effects on the educational system and the conditions that the project had to work within. Productive task could be moved to partners less affected and with more uninterrupted capabilities. Similarly, overlapping competencies within a Core Team does much to further project resilience in the face of organisational contingencies such as staff turn-around, et c. In this context, overlapping competencies do much to reduce "key person risks" i.e., when substantial amount of the project´s work process builds on the skills and competencies of a one, or a few individuals, who might fall out of the project for some reason.

So, how does one form good educator teams? The question is as important as it is difficult to answer. The persons involve in project planning and staffing need all their human resources skills as well as their intuition. A good rule is to base recruitment on direct personal knowledge of the individuals concerned. If you previously cooperated well with an individual, and this individual also has the ability to cooperate with others, then he or she probably is a good recruitment prospect. Some salient points in the profile of the good team member are

evident. Besides intrapersonal skills, the person should have a genuine will to contribute both to the project, to overall school development, as well as the development of educational best practice. He or she must also be a dedicated professional and aware of the fact that a Thematic Learning project carries new and added responsibilities, and with them, a corresponding increase in workload. Other necessary qualities are creativity, high degree of personal initiative, high professional skills, as well as the ability to communicate with, and motivate, students and colleagues. In case of a transnational project, the prospective educator should be prepared for relatively extensive travel and should be comfortable with the prospect of working within other culture spheres than his or her own.

A good way to assess the quality of prospective project members is to seek their input during the project planning process i.e., even before they become official team members. Input from a dedicated and competent group of educators is a valuable resource and will increase the quality of the project. This approach also gives an indication of how well the group will work and cooperate.

In the context of project recruitment, it could also be interesting to know what to avoid. Experience over the years and several projects show that certain individuals can be attracted to a project without being fully prepared to contribute to the attainment of its goals. In most cases this is mainly the result of a misunderstanding of the amount of work that the project requires, and can easily be corrected by the project leadership, if they make the work requirements clear during the recruitment process. If the individual then expresses doubts concerning his or her ability to carry the workload and new responsibilities, he or she is wise to refrain from participation. The project leadership should consequently not try to goad this individual into participation, whatever otherwise suitable qualities he or she may possess, since the individual know his or her limitations best. Nevertheless, there may also be certain individuals that are solely attracted to a project because they perceive participation as "glamorous", "career enhancing", as a way to demonstrate "special professional status" or expect the project to offer "fringe benefits"; this without being prepared to accept new responsibilities and the associated workload. These individuals usually are keen to participate in planned after-hours social activities, study visits and, indeed if the project will be transnational, international travel. On the other hand, they normally miss ordinary planning meetings, have difficulties in delivering on even small tasks, don´t provide relevant input, are slow to answer e-mails and avoid participation in social media-, or other, discussions concerning the planned project. Evidently, any eventual "free rider-problematics" must be identified as early as possible in the process and discounted from the future project.

The discussion above has focused on the general traits of the good Core Team member. In the context of the realisation of the project´s theme and its objectives, it is also necessary that the educator possesses the more specific skills and knowledge relevant to the realisation of the theme. During DEMETER the configurations of skills/knowledge sets within the different Core Team became instrumental in carrying out Thematic Learning and for supporting the students in all theme-related tasks. The DEMETER Core Teams were configured to cover several STEM- and general subjects with a certain degree of specialisation between the

different teams. The different teams consequently had to possess the specialised skills and knowledge necessary for the completion of the tasks allocated to them in the division of labour and for the collaboration with other Core Teams. For instance, the STEM-focused project activities concerned with the development of a Rover control- and data transfer system required two Core Teams possessing advanced knowledge in electronics and programming. These two Core Teams, and the students led by them, consequently cooperated in the development process. The same two Core teams also contained competencies in general subjects and art, and this was used in cooperation with other Core Teams to perform non-STEM tasks within the framework of the overall theme.

The Core Team concept thus shall be seen as a group of educators possessing necessary skill and knowledge to lead students in the thematic activities, usually in intense cooperation with other Core Teams. As previously stated, the Core Team also has the liberty of involving educators outside of the project for other temporary or more limited tasks. While this extends the number of possible project activities, this approach also has the added advantage of involving even more colleagues in the project, thus introducing additional educators at the school to Thematic Learning. As a case in point, DEMETER made use of educators and classes in *inter alia* languages, art, and design to further the project´s differentiated activities.

Takeaways – You are recommended to:

- set a formal but uncomplex organisational structure that allows easy management, an intuitive "chain-of-command", division-of-labour, and streamlined information flow.

- subdivide all but the smallest of projects into educator teams (i.e., Core Teams) under the Project Leader and appoint a team leader for each Core Team.

- divide responsibility for different Thematic Learning activities between the Core Teams according to their expertise.

- have overlapping competencies within the Core Team, and between the Core Teams, to reduce "key person risk" and strengthen the project against "uncontrollable external events".

- base recruitment on direct personal knowledge of the individuals concerned.

- recruit team members that are dedicated professional with:

  o good intrapersonal skills.
  o a genuine will to contribute both to the project, to overall school development, as well as to the development of educational best practice.

- o   creativity.
- o   a high degree of personal initiative.
- o   high general professional skills.
- o   the ability to communicate with, and motivate, students and colleagues.
- o   specific skills and knowledge relevant to the realisation of the theme.

- inform the prospective team member of what is expected of him or her in terms of new responsibilities and workload.

- not try to goad an individual into accepting a role in the project, if the individual is unsure of his or her ability to carry any extra workload and new responsibilities.

- be aware of any potential "free rider-problematics".

- also be prepared to use educators outside the project team for supporting project activities.

Embedment and anchoring of the project

For a Thematic Learning project to be feasible it needs the active support of the educational institutions within which it is meant to be undertaken. This equally applies to the smaller project undertaken within one single school, as to the large project partnership involving several educational institutions in different countries. The project´s human capital and educational infrastructure do in principle belong to an overarching organisation such as an individual school, a school precinct, et c. Since every project will make claim to a part of the resources available to that organisation, in the form of working hours, class time, educational spaces et c., it is of the utmost importance that educational management lend their active support for the project effort. The term embedment is used here to signify the inclusion of educational management in strategic decision-making. The embedment effort should also include other project stakeholders where applicable. Anchoring here means the subsequent acceptance of the project's goals and objectives, not only by the educational management, but by the relevant educational institution, or institutions, seen as a whole.

The first obvious way toward the embedment of school management is to, early on, inform management about salient aspects of the Thematic Learning project and accept their input into the planning process. At some stage, efficiency in communication will probably require the establishment of a steering group including educational management, project leadership and other stakeholders. The role of the steering group here becomes an asset for helping the project leadership in strategic decision-making. The accent here is on the making of strategic decisions; the project leader still should keep a substantial measure of freedom to run the project. DEMETER involved a steering group including high level school management, together with headmasters of participating schools, as well as representatives of local industry with an active interest in *inter alia* robotics. The steering group, which met regularly, proved to be an invaluable resource for the project leader, as the group could help with strategic decisions and free up resources at critical points in the project life cycle. In addition, the steering group, with its composition of both management and stakeholders, also became a resource for the project´s dissemination activities. Furthermore, as the collective steering group became embedded, DEMETER subsequently became anchored at a managerial and stakeholder level.

Embedment can subsequently be seen as an important step in the anchoring of the project and should be undertaken early on during the planning stage of the project. With educational management "onboard", the project should have the necessary legitimacy for attaining general acceptance within the rank and file of the educational institution and could consequently be considered as anchored in the organisation. This however also involves concentrated efforts to continuously inform fellow educators, students, parents, and other stakeholder during the project´s life cycle. During the planning phase, the interaction created by the anchoring process also contributes to project qualities by giving new opportunities e.g., to recruit interested colleagues and to exchange ideas concerning the project.

It should be noted that there exist substantial advantages with the embedment and anchoring of a project at a higher level of educational management. This is particularly true for larger projects extending over longer timeframes. High-level management commands substantial more resources and usually have a more comprehensive and strategic view of the educational system than middle-level management, e.g., headmasters et. c. Eventual staff-turnaround at middle-management level could also jeopardise the continuity of longer projects, while the more pronounced continuity at high management level offers substantial stability. Consequently, DEMETER opted to anchor the project at the level of the Director of the Educational Department in the city where the project leadership was based.

Takeaways – You are recommended to:

- embed educational management and include them in strategic decision-making by forming a steering group.

- include other stakeholders e. g., local business interest et c. in the steering group.

- anchor the project with other educators, students, parents, et c., at the school(s) that participate in the project. Actively inform colleagues of the project in order to encourage cooperation. Continue the information effort during the entire project life cycle.

- embed/anchor the project at as a high management level as possible within your organisation.

Interproject communication planning

Running a Thematic Learning project is communications intensive. Participants in the project must constantly be informed, consulted, and instructed. This applies equally to participating educators, students, and other stakeholders. It is consequently necessary to plan and build up a communications infrastructure tuned to the needs of the project.

As indicated above, the way of day-to-day management of the project is affected by its organisational size. A smaller project conducted within the walls of a single school could very well be managed with direct contact between the parties. A larger project with geographically separated partners, like a transnational project, requires more in the way of an organised communications infrastructure. With a larger number of partners in different locations an ICT solution needs to be chosen to handle daily communication. DEMETER decided to use SLACK which is a team collaboration tool using a chat format with multiple channels for different project topics. There are however a multitude of other software platform offering team collaboration solutions that may serve your needs. Many of them are also offered "free", with buyable upgrades. In any case, be aware of the fact that "free" software may have their terms-of-service changed during your project´s life cycle, forcing you to either pay for an upgraded version or have to "port" your data to another platform.

For DEMETER the choice of SLACK meant that project participant had access to immediate communication and file transfer. The SLACK communications platform proved invaluable for DEMETER, especially when the COVID-19 situation started to shut down educational institutions and when project participant, in several cases, became isolated in their own homes. All in all, SLACK proved to be a very efficient tool for connecting project management, educators, and students within the same platform.

After finally selecting a team collaboration tool, it is important to also stay with it. New software solutions will constantly appear on the market, each one claiming to be superior to the other. The project will nevertheless not benefit from one or more changes of team collaboration tool, however superior the new solution claims to be since confusion will reign over where communications and files are located. At worst, the project will then end up with a series of parallel communication channels precluding effective management and information dissemination.

Efficient day-to-day communications solutions do not however free you from having formal Main Project Meetings, or in the case of international projects; Transnational Project Meetings, at regular intervals. The Main/Transnational Project Meeting is a substantial more comprehensive affairs than local day-to-day, perhaps *ad hoc,* meetings used to resolve limited issues. The Main/Transnational Project Meeting, which should include all educators in the project, is chaired by the project leadership and conducted on a more strategic level. During the Main/Transnational Project Meeting the current status of the project is ascertained, undertaken activities are accounted for and results discussed. Any issues affecting the overall project are discussed and possible solutions decided on. Project goal attainment is reviewed, and materials procurement needs are studied with the appropriate procurement decisions

made. The project budget is followed up and deadlines for the completion of future project activities is set.

The frequency of Main/Transnational Project Meetings is in many ways a function of the project´s organisation. A transnational project, where physical face-to-face meetings involve travel, may have to limit physical meetings to maybe two per year. An organisationally smaller project that don´t involve travel could, of course, have more frequent physical project meetings. The transnational project meetings within DEMETER became intense four- to five-day affairs, since the project team had a lot of subject matter to cover with relative few total meeting days at their disposal. In addition, the extraordinary pandemic conditions present during the project led to the full or partial cancelation of some transnational project meetings, forcing the teams to run very work-intensive meeting sessions when they finally had the opportunity to meet in person. In normal conditions you are however still recommended to use physical Main/Transnational Project Meeting time in an efficient manner. The physical face-to-face meeting, with its associated human interaction with the full project team, is unsurpassed for advancing creativity, initiative, and common ground within the project.

Modern ICT offers many solutions for virtual meetings. Under normal conditions, these should be seen as supplemental to physical meetings in view of the abovementioned inherent qualities of the latter. Virtual meetings are, however, very suitable when gathering selected groups of project participants for limited interaction between Main Project Meetings. This practice was frequent within DEMETER, especially in the form of "coordinators meetings" between national Core Team leaders. Virtual meetings are also excellent tools for resolving issues that rapidly emerge during the project process, and when the project participants are geographically separated, and should consequently be in common usage.

Virtual meetings are, however, due to the inherent qualities of the media, a poor substitute when it comes to run longer sessions like Main Project/Transnational Meetings and should only be used in contingencies. Due to the severe pandemic conditions present during a large part of the DEMETER project life cycle, the project had to substitute two planned transnational project meetings for entirely virtual gatherings. The project meetings attained their objectives, but this came at a cost. The running of a virtual project meeting over several days proved an exhausting experience as participants were tied up in front of their computer screens for entire days, without normal human interaction and the possibility of informal face-to-face discussion between discussed topics. However, in hindsight it must be stated that the use of virtual meetings in this context was crucial for the realisation of these Transnational Project Meetings and thus served well as contingency measures under prevailing extreme conditions.

The experiences of DEMETER demonstrates that a robust communications infrastructure is essential for communications intensive Thematic Learning projects. Consequently, the communications infrastructure should be set into place early-on in the planning process and should not be left to evolve in an *ad-hoc* fashion after the project have started.

Takeaways:

- Thematic Learning projects are communications intensive since participants in the project must constantly be informed, consulted, and instructed.

- The way of day-to-day management of the project is affected by the projects organisational size.

- Smaller project may be managed with direct contact between the participants.

- Larger projects require requires an organised communications infrastructure.

- Larger projects should make use of an ICT team collaboration tool of their choice as the project communications platform.

- A multitude of team collaboration tools are available "for free". However, be aware that the tool´s "terms-of-services" may change during the project, requiring you to pay for software upgrades or lose access to your data.

- After selecting a team collaboration tool – Stay with it and do not change or duplicate communication channels. This will only lead to confusion over where communications and files are located. The project also risk ending up with a series of parallel communication channels hampering effectiveness.

- Conduct formal, physical face-to-face Main Project (or Transnational) Meetings, involving all educators in the project, at regular intervals.

- The physical meeting is unsurpassed for advancing creativity, initiative, and common ground within the project.

- ICT solutions like virtual meetings should be seen as supplemental to physical meetings. Virtual meetings are very suitable for gathering selected groups of project participants between Main Project/Transnational Meetings. They are also essential during contingencies that prevent physical meetings.

- The project´s communication infrastructure should be in place early-on in the planning process.

The written Project Plan – a central document

Planning for a Thematic Learning project takes considerable time and will require substantial effort from all involved in the planning process. The development of a loose concept into a ready well documented project plan can easily take six months or more, depending on the experience and resources of the educational organisation. This is, however, time and effort well spent. Time has now come to set down all your previous planning into a formal written project plan. A well-prepared project plan document will serve as a valuable "roadmap" for all activities within the project during its entire life cycle, e.g., stating why the project activities are done and who will be doing what at all the different phases of the project. A good project plan constitutes a document that should be constantly consulted and followed during the project´s entire life span. Furthermore, it should clearly set down the division of labour within the project and allocate resources for the attainment of the project's goals. As a "roadmap" it should be sufficiently detailed to clearly point out intermediate goals and objectives that must be met, as well as setting up the time frame for their attainment. At the same time, it must provide the project team sufficient flexibility in the execution of the project´s activities to be able to respond to the effects of dynamically changing circumstances affecting all projects (staff/student rotation, organisational changes, force majeure-related issues, et c.).

A Thematic Learning project plan needs to address a multitude of aspects and possible issues over the project´s entire life span. The method of Thematic Learning will, if undertaken as a joint project between several education institutions, add another layer of complexity to the project planning, since a multitude of activities will take place more or less simultaneously in different places. Each of these activities must consequently be planned in sufficient detail to attain the project´s goals and receive the appropriate resources.

The well-written Thematic Learning project plan will, if followed, allow for the creative initiative of the project team while preventing the common organisational problem of "mission drift", i.e., that participants start activities not called for by the project, expanding or diverting its scope outside what was previously agreed upon, thus deviating from the projects final goal. In this context, the project plan can be said to contain the projects "mission statement" and project leadership should not hesitate to refer to it as "the law" of the project.

Since DEMETER was a transnational project undertaken within the framework of Erasmus+, the written and formal project plan first and foremost took the form of the submitted and approved Erasmus+ application. Completing an Erasmus+ application can be seen as slightly daunting to the first-time applicant, but the application form is, in itself, a powerful tool for project planning. The questions posed in the application form are all relevant and aimed at covering central aspects of your project. The application form will help you to consider all relevant areas of the future project and perhaps help you focus on aspects that you have not previously considered in the planning process. Consequently, even if you are planning a project outside the scope of Erasmus+, it would be wise to at least look at the forms used to

apply for Erasmus+ funding, since these forms will give excellent guidance when you formulate your written project plan.

As stated above, the project plan is a roadmap for the project and needs to address a multitude of differentiated aspects. The following list of areas to cover is thus far from complete but should serve as a guideline for the building of a minimum framework for the project. A project plan should therefore at least:

- define the timeframe of the project.

- clearly state the context and the objectives of the project and the needs that are addressed by the project. State the targets groups for the project´s end results.

- state the expected results and material/immaterial final output of project.

- describe the project and its activities and explain how the project´s activities are expected to lead to the attainment of project objectives and expected results.

- schedule and set deadlines for central project activities.

- explain the necessary preparations that must be done before the actual project activities take place.

- describe the formal organisation of the project.

- list the educators and/or educational institutions that will participate in the project and their areas of expertise. What necessary competencies do they each contribute with?

- describe the division of labour within the project in detail. Who takes care of what?

- schedule when, and where, meetings within and between teams, will take place.

- describe how you will communicate with project participants, i.e., outline your interproject communications plan.

- include a contingency plan. Try to list eventual problems that might occur during the project life cycle and indicate how you plan to handle these problems and risks.

- include a project budget.

Section 2

Thematic Learning – How does it benefit students?

Integrated learning is believed to aid pupils in acquiring educational and nurturing outcomes [1]. Through the use of a more student-focused approach, integrated learning provides the chance to engage a variety of students' potentials in the learning process. The integrated learning model provides sufficient opportunity for the participation of various students' experiences since the raised themes are picked from what students contribute, which may be drawn from prior experience, and based on the perceived requirements of students [2].

Thematic integrated learning has been the subject of a great deal of research. It has demonstrated a track record of improving student learning outcomes as well as interactions with teachers and other students.

By enhancing students' responsibility and capacity for cooperation, thematic learning can also foster teamwork and have a nurturing effect.

Mavropoulos et al. [3] talked about using an interdisciplinary (integrated) approach when studying chemistry in their study. This study's main area of interest was the multidisciplinary approach to teaching the subject of "food." After the results showed a rise in student-teacher interaction, it was suggested that interdisciplinary models be used similarly in a different subject.

Ruth [4] looked at the disparities between the experimental group, which used integrated theme learning, and the control group, which used traditional learning, in terms of how well the students performed in primary reading.

The experimental school's kids' scores increased by 16% over the course of the two years, but the control school's results only increased by 3%.

Children who learn best visually benefit from integrated learning. According to Rose and Nicholl, a person employs visual models more frequently because they are simpler to com-prehend and recall and make use of the greatest portion of the human brain—the area devot-ed to visual processing. Concept maps and visual representations encourage learners to think broadly and creatively about a subject [5]. These definitions suggest that a youngster with a visual learning style will probably learn more effectively than a child with an auditory learn-ing type.

First-graders are frequently still in the early phases of learning to read or early reading, therefore early reading aptitude is another factor that needs to be taken into account when evaluating kids. Through reading and writing assignments, students will obtain the knowledge and abilities necessary to investigate, research, and understand the knowledge in accordance with their own needs and interests as autonomous learners [6].

Difficulties in Implementing Thematic Teaching

The curriculum is altered as a result of the 21st century shift in learning paradigms. According to Chen (2012) [8], the material flow in textbooks is always followed by traditional learning activities, which have a teacher-centered paradigm. The paradigm is thought to be less applicable to the needs of the twenty-first century. Accordingly, Harris & Rooks (2010) [9] assert that the student-centered approach—also known as the new learning paradigm—encourages teachers to support students in building their knowledge and capacity in discovering and connecting concepts in discovery or innovation activities. Liu & Wang (2010) [10], who assert that learning resources should be organized in line with the definition of an integrated curriculum, believe that the curriculum reform has been successful in improving learning impacts. Schools gradually incorporate several modifications to the learning activities and competencies that students should be able to perform.

Teachers' understanding

Description	Difficulty and Cause	Strategy
The teachers' understanding of the curriculum, including the competence standard	Many teachers responded negatively to the process of curriculum transition.	1. Continuous training and mentoring 2. Curriculum socialization and training that would not only be limited to theoretical review 3. Trained teachers who should share their knowledge and insights with their colleagues
	Many teachers did not want to change their mindset.	
	The teachers were not prepared to deal with the curriculum change.	
	Many teachers had not understood the new curriculum completely.	

Source: article Teachers' Difficulties in Implementing Thematic Teaching and Learning in Elementary Schools, June 2017 The New Educational Review 48(2):201-212

Description	Difficulty and Cause	Strategy
The teachers' understanding of the thematic teaching and learning	The teachers had already understood the definition of thematic teaching and learning.	4. The providence of mentoring program that involved the core schools as the center of information and the impacted schools by the government
The teachers' understanding of the PBL	The teachers were relatively familiar with the term PBL.	5. The process of pursuing in-depth curriculum understanding independently.
The teachers' understanding of the PjBL	Teachers were not familiar with PjBL	
The teachers' understanding of the assessment	The teachers in general understood the assessment aspects within Curriculum 2013	
	The teachers had not understood the details of assessment process.	

The teachers' negative stigma and unique characteristics, such as the fact that they still had not opened their minds to the change and still had a poor spirit of independent learning, made it difficult to modify the instructors' understanding of the curriculum. Positive effects were produced by the government's extensive efforts to spread the curriculum. Not all teachers had a comprehensive understanding of it. The instructors' comprehension of Curriculum was insufficient overall. Despite being familiar with these methods, they did not comprehend the goals or procedures of teaching and learning activities.

Learning implementation

Description	Cause	Strategy
The teachers' difficulty in implementing thematic teaching and learning	The learning plan and preparation was relatively difficult.	1. It required creativity to perform inter-item associations within one theme.
	The difficulties were overcome by returning to the partial learning process.	2. There should be optimization of the role of school principal as a supervisor.
	It was difficult to implement the scientific learning path.	
	It frequently occurred that the contexts had not been contextual.	

Description	Cause	Strategy
The teachers' difficulty in implementing problem-based learning	The PBL model had been rarely implemented because it was considered difficult and complicated.	The school principal should control the learning process through correction of the learning sets and their implementation. The school principal should provide teachers with multiple education through his/her role as a supervisor.
	It was difficult to determine the appropriate problem base.	
	The teachers were still confident with the teacher-centered approach.	
The teachers' difficulty in implementing project-based learning	It was difficult to manage the time in the PjBL approach.	
	It was difficult to select the appropriate project.	
	The teachers were still confident with the teachers-centered approach.	
The teachers' difficulty in exercising the HOTS	There were many teachers who had not understood the HOTS and its development.	
	The students had not been accustomed to the HOTS and its development.	

Source: article Teachers' Difficulties in Implementing Thematic Teaching and Learning in Elementary Schools, June 2017The New Educational Review 48(2):201-212

The study did not fully implement the scientific and teaching and learning concepts. The 5M method had the teachers entangled. Due to their reputations as being challenging and complex, problem-based learning and project-based learning have also seen a decline in adoption. As a result, the majority of instructors thought that using the teacher-centered approach to instruction would be more practical. Higher-order thinking skill (HOTS) development requirements and obstacles had not yet materialized. The implementation of the method, which had not increased the HOTS capacity, was one of the challenges.

Learning Facilities

Description	Cause	Strategy
Book availability	There were delays in book distribution in the schools.	1. The school advised the teachers and students to download the books from the Internet.
	The book number was not balanced to the number of students.	2. The school suggested the teachers should design lesson plans according to the new curriculum independently, including the topic composition.
	The library quality was less sufficient.	
Learning media/supporting display	The teachers rarely used learning media.	The teachers were required to be creative in providing the learning media independently
	The differences among schools in terms of school facilities were high.	
	The learning media availability was limited.	

Source: article Teachers' Difficulties in Implementing Thematic Teaching and Learning in Elementary Schools, June 2017The New Educational Review 48(2):201-212

The quantity and distribution of books are both problematic. In order for the learning process to function efficiently in accordance with the curriculum standards, teachers must be more innovative.

Assessment

| Description	Cause	Strategy
Spiritual attitude assessment	The class size is very big	The score output was designed in two versions, namely in description and in number
	The assessment frequency is high	
	There are no similar learning results among the teachers.	
Social attitude assessment	The teachers cannot select or implement the effective and efficient attitude assessment technique.	

Source: article Teachers' Difficulties in Implementing Thematic Teaching and Learning in Elementary Schools, June 2017The New Educational Review 48(2):201-212

Description	Cause	Strategy
Knowledge assessment	The determination of test item composition is difficult.	
	The teachers have difficulties especially with regards to the mapping of students' capacity.	
Skills assessment	It is difficult to design an assessment rubric.	
Should assessment involve the HOTS?	The assessment does not reach the HOTS	
School report writing	The teachers have difficulties in creating description.	

Source: article Teachers' Difficulties in Implementing Thematic Teaching and Learning in Elementary Schools, June 2017The New Educational Review 48(2):201-212

Literature

[1] Tudor L S 2013 Primary school skills development through integrated activities Procedia - Social and Behavioral Sciences 127 pp 722—27

[2] Brand,S R(ed) 1991 Integrating the curriculum: Educational leadership Journal of ASCD 49 (2)

[3] Mavropoulos A, Roulia M, and Petrou L 2003 An interdisciplinary model for teaching the topic "foods": A contribution to modern chemical education Chemistry Education: Research and Practice 5 (2)

[4] Ruth N S 1998 A comparative study of Integrated Thematic Instruction (ITI) and non-integrated thematic instruction Doctoral dissertation, (Texas A&M University http://wwwkovalikcom Retrieved on 11 April 2005)

[5] Rose C and Nicholl M J 1997 Accelerated learning for the 21 st century (London: Judy Piatkus)

[6] Torgesen J K 1998 Catch them before they fail: Identification and assessment to prevent reading failure in young children American Educator pp 32—9

[7] Heri Retnawati et al. A comparative study of Teachers' Difficulties in Implementing Thematic Teaching and Learning in Elementary Schools pp 201-208

[8] Chen, Y. (2012). The effect of thematic video-based instruction on learning and motivation in e-learning. International Journal of Physical Sciences, 7 (6), 957–965.

[9] Harris, C.J. & Rooks, D.L. (2010). Managing inquiry-based science: challenges in enacting complex science instruction in elementary and middle school classrooms. Journal of Science Teacher Education, 21, 227–240.

[10] Liu, M.C., & Wang, J.Y. (2010). Investigating knowledge integration in web-based thematic learning using concept mapping assessment. Educational Technology & Society, 13(2), 25–39.

TASK SELECTION

**An integrative vision. How to choose the topic and integrate it into the curriculum?**
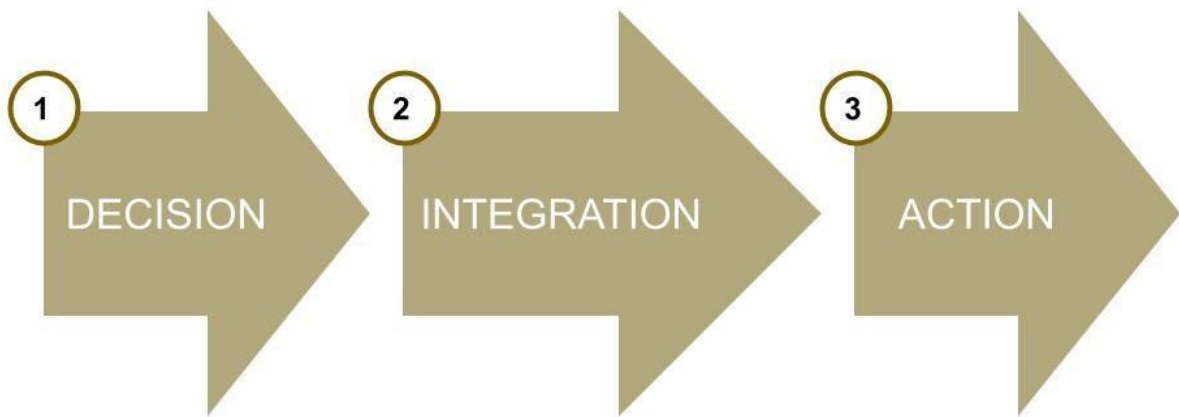
When an educational team from one or more centers plans to work through thematic learning, the process of implementing this methodology will take place in three phases:

- **Decision**. In this phase the topic will be chosen. It is a very important phase since the theme will be the concept worked on throughout the duration of the project. The topics can be very varied and will depend a lot on the educational stage of the students. Examples of topics can be pirates, the Egyptian pyramids, the arrival of man on the moon, etc. Sometimes there are very specific concepts (the lives of soldiers during the Second World War) and other very open ones (life on earth).

- **Integration**. The concept or theme must be integrated with the study plans and for this, activities, visits, events, etc. must be made to introduce students to the project. The students will have to have a vision of what is going to be worked from that moment until the end of the project. In addition, teachers will have to adapt their curricular plans and content to guide and accommodate the topic with which they are going to work.

- **Action**. It is perhaps the longest phase. In this phase the methodology will be developed at the same time that the chosen topic is being worked on. Understanding, solving problems in daily life and avoiding rote learning should be the guideline for the development of this part of the project. In the information society in which we find ourselves today, rote learning has no place since the Internet and other resources, as in real life, will provide us with all the necessary data. The kid of the question is how to use that information to solve the problem posed.

Things to consider when picking a theme?
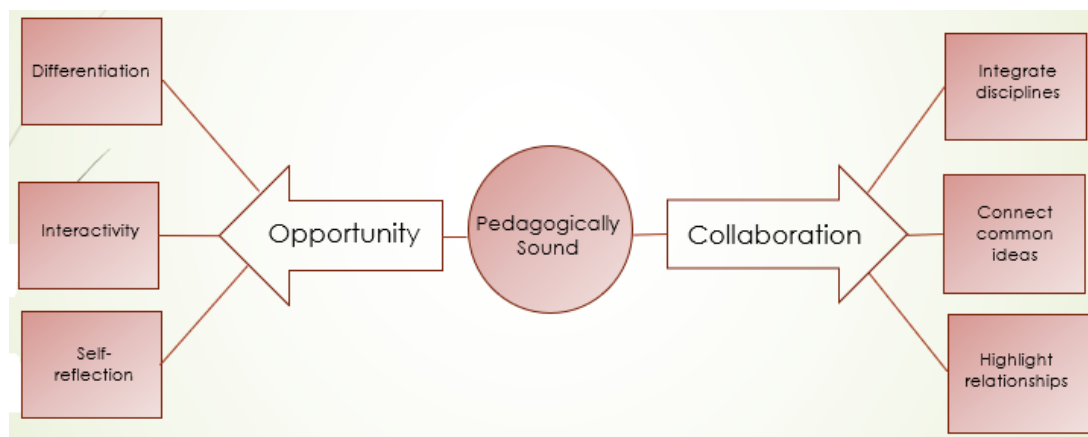
Source:
https://knilt.arcc.albany.edu/Lesson_Two_-_Characteristics_of_an_Effective_Theme

An effective statement has the following features:

catches the reader's interest genuine, pertinent, relatable, seasoned, and expected

Clearly expresses the subject

informs stakeholders and students of the advantages and significance

Difficulty of the task –

Task difficulty: When creating an assignment for a student to accomplish, an educator would typically control the task's difficulty level so that it may be performed successfully by a wide number of students while also requiring them to use new abilities or hone existing ones. Both learner factors—behaviors of learners that affect their capacity to finish tasks—and task factors—task kinds or qualities of tasks that affect their difficulty—determine the complexity of a task. (1993, Honeyfield). [1]

Students were not very good at guessing which tasks they had to perform were going to be tough and which ones would be easy, according to one research on the relationship between task difficulty perception and actual difficulty that is particularly relevant to this topic. The authors discovered that perceived difficulty in easy activities led to intimidation, which in turn led to a partial or total reduction in effort and/or time wastage in the form of looking for concealed complexity.

In contrast, a challenging assignment perceived as simple led pupils to feel insecure and, as a result, put forth less effort or assumed that the problem's important component was a straightforward one that, when performed, solved the entire task. It is crucial to remember that task performance, rather than variations in attributes intended to make it more or less difficult, was used to determine task difficulty (Nunan & Keobke 1995). [2] It is commonly established that a task's complexity has a significant impact on the effectiveness of an educational program, both in terms of encouraging material mastery and enhancing students' academic skills (Lannie & Martens 2004) [3].

Nearly all experts in both applied education and educational research concur that assignments that are moderately tough lead to higher levels of competence in students than materials that are either too difficult or not difficult enough (Piaget & Garcia 1991[4]; Vygotsky 1978[5]). Additionally, Gickeng & Armstrong (1978)[6] shown that information that was taught at an instructional level appropriate for the students in a certain classroom resulted in more on-task behavior than material that was either too hard or too basic. We are only interested in the task characteristics that are directly under the control of educators, even though the overall difficulty that a task presents to a student depends on three independent groups of factors: learner characteristics, subject/content characteristics, and task characteristics (Brindley 1987).
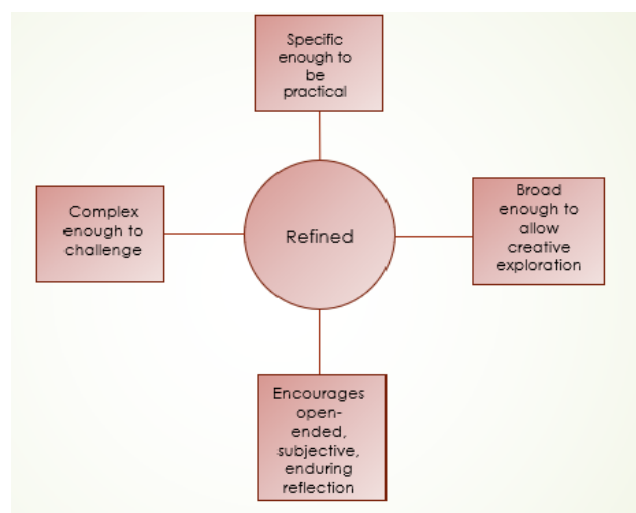
Source: https://knilt.arcc.albany.edu/Lesson_Two_-_Characteristics_of_an_Effective_Theme

Type of school –

School type: This task selection criterion should go without saying. You select a subject (theme) that relates to what you do at your school. One thing should be handled carefully. Sometimes the work you undertake at school works fine as a tool but not as a central focus.

Suppose you're a teacher at a vocational school for programmers and you're trying to come up with a theme for your students. You decide that teaching your students about game creation would be a terrific idea. That may be the case, but game programming and design are not in and of themselves themes. You can include a game component in the lessons you teach. Always make the theme larger than that.

Themes must be genuine, meaningful, and timely in order to be effective.

Teachers must select a theme that has these qualities and will satisfy educational standards in order to be effective. There isn't much information available to help teachers identify an appropriate theme if they want to adapt some or all of their curriculum to themed instruction. [8]
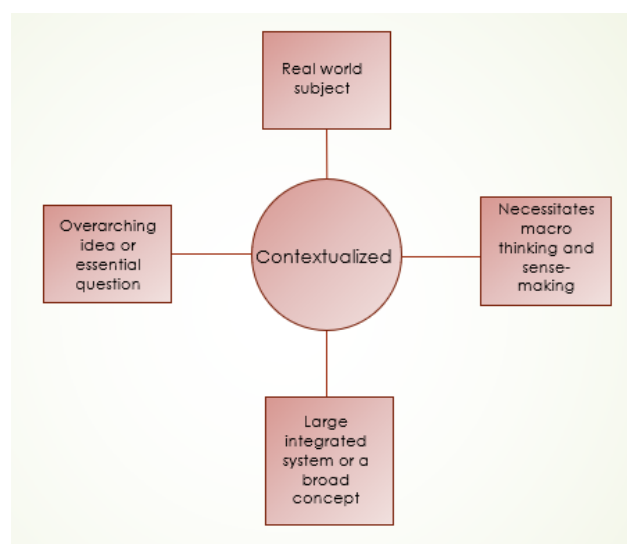
 Source: https://knilt.arcc.albany.edu/Lesson_Two_-_Characteristics_of_an_Effective_Theme

It should be related to a real world problem. Ideally it would be a problem that students have or can relate to. At this point there is no need to worry about ability of integrating that theme into different subjects. We'll leave that for later.

Questions you should ask yourself when deciding on a theme [9]:

Do you want students to work on their own, in pairs, or in groups? Do you want teachers working in groups?

This is a question of a scope of a single theme. How do you want a theme integrated into different subjects? Do you want teachers of different subjects to solve the same problem with students in different ways or you want all of them working on a same solution?

You'll get quite different result depending on your answers to this question. Also, if you want each of them working on a same problem you have to chose so that tasks can be done in all (or most) of the subjects – and that's quite hard.

How many stages are there to this project?

Can you divide your theme into simple steps? Complex themes can be quite scary for students (even for teachers) and to avoid that you should slice it into smaller projects. You want to create a complete gamified environment? Split it up into: logic, material (hardware), multimedia. Each of those parts can be further divided… divide multimedia into music, graphics, special effects and so on...

Student participation in the chosen theme is required. Because of the age difference, it might be challenging for teachers to understand their students' perspectives. You might assume that they are interested in certain topics, but it might be quite the reverse.

Here are some methods for learning a little bit about your pupils' areas of interest.

While there are several ways to find out about a student's interests and strengths, the following can all be done as pre-assessments, ongoing checks for understanding, or even official evaluations of student learning [10]:

Opening Letter: Before beginning a project (thematic learning), ask students to compose a letter in response outlining what they need to know, understand, and be able to do for the following work. This can be an effective way to learn about their degree of interest in the subject, their misconceptions about it, their skills and needs, and how you can best meet those requirements. You might look at how different themes might be applied in your opinion and include distinctions between them.

Student Survey: Request written responses from students to a number of open-ended inquiries concerning the themes (never put too many questions in a survey). The questions may test their knowledge of the subject or their comprehension of fundamental concepts. Alternately, the questions could be process-oriented, asking the respondent to consider what they have learned or read. A survey or anticipatory guide like this one is frequently able to pinpoint pupils who could gain from compacting.

Truth Statements: Instruct students to compose a one-sentence "truth statement" on each of the topics you suggest, such as "reading between the lines," the most interesting day of class (or at school), what they do when they are stuck in a text, etc. It's an easy approach to learn what they find intriguing, simple, and challenging. In this method, you can discover what issues and topics people are interested in. You can make those subjects the focal point of your theme.

Think Aloud: Pick a passage from a work that you believe best exemplifies the kind of trouble students might have understanding it. As you read, pause to add your own spontaneous thoughts and identify the words that make them come to mind. Students need to see and hear proficient readers describing their thinking through text, regardless of the cognitive skill you are illuminating while reading. Give them the chance to express their own thinking through words in addition to expressing your own. This can be a potent window into

a student's strengths and reading habits whether it is carried out in a full group, heterogeneous or homogeneous group, or in pairs. A straightforward student observation chart on a clipboard can quickly become filled with insightful student comments after hearing students think aloud.

Regardless of the questions you choose, it's important that we just ask. Asking students questions because you are sincerely interested in knowing more about them as individuals is a powerful way to start the year. It tells students their voices and perspectives are valued, and it creates a classroom culture that acknowledges and responds to students' unique needs and preferences.[11]

Inclusion of subjects –

Naturally you would like to include most of the subjects if not all. Best advice we can give you is not to push anything. Let the subject be logical. Decide about the theme and then talk to the teacher of each subject.

Can Mother tongue and foreign language (As subjects) be included in thematic learning – Depends on what they learn that year? Do they learn reported speech? Do they learn how to write reports and so on…

It can be really helpful to include wide variety of subjects in beginning of thinking about incorporating thematic learning into your curriculum.

Integration of key competences in the curriculum

The goal of DEMETER has always been to incorporate the competencies that help students recognize and develop their talents and abilities.
This type of activity makes it simpler for the learner to absorb new ideas and advance academically. The competencies that we have incorporated into the DEMETER project are listed below:

- **Proficiency in communication.** It is essential for students to communicate with one another not only in their own tongue but also in a foreign language like English. In DEMETER, teams of students from various countries have been formed to collaborate on various project components. Additionally, a group presentation has always come before any dialogue.

- **Mathematical, science and technology competence**. This DEMETER project is basically a technical project. In it, the use and development of scientific methodology and knowledge is necessary.

- **Digital competence**. DEMETER students use new technologies as the basis for communication, learning, analysis, production of results, etc.
- **Acquire knowledge.** Students can develop their organizational and teamwork abilities by completing projects based on thematic learning.

- **Social and civic savvy.** Many moral conundrums have been discussed in the DEMETER projects, and the students will comprehend and reexamine ideas like justice, human rights, solidarity, etc. through a variety of exercises.

- **Initiative and a spirit of entrepreneurship.** The student must be in charge of their own education and must decide how to approach problems. The DEMETER project will present challenges that the student must manage and plan to overcome.

- **Expression and awareness of culture.** One of the main tenets of the DEMETER initiative is art. The project participants incorporated this discipline because we think that student training should include it as a fundamental component.

[1] Honeyfield, J. (1993). Responding to task difficulty. In M. Tickoo (Ed.), Simplification: Theory and practice (127-138). Singapore: Regional Language Center.

[2] Nunan, D. & Keobke, K. (1995) Task difficulty from the learner's perspective: perceptions and reality. Hong Kong Papers in Linguistics and Language Teaching, 18, 2-12.

[3] Lannie, A.L. & Martens, B.K. (2004). Effects of task difficulty and type of contingency on students' allocations of responding to math worksheets. Journal of Applied Behavior Analysis, 37. 53-65.

[4] Piaget, J. & Garcia, R. (1991). Toward a logic of meanings. Hillsdale, NJ: Erlbaurn.

[5] Vygotsky, L. A. (1978). Mind in society: The development of higher psychological processes. Cambridge, MA: Harvard University Press.

[6] Gickling, E. E. & Armstrong, D. L. (1978). Levels of instructional difficulty as related to on-task behavior, task completion, and comprehension. Journal of Learning Disabilities, 11, 32-29.

[7] Brindley, G. (1987). Factors implicated in task difficulty. In Nunan, D. (Ed.) Guidelines for the development of Curriculum Resources. Adelaide: NCRC

[8]   https://knilt.arcc.albany.edu/Lesson_Two_-_Characteristics_of_an_Effective_Theme   [VISITED: 29.12.2020.]

[9]   https://www.etprofessional.com/ten-questions-to-ask-yourself-when-setting-up-an-activity   [VISITED: 5.1.2021.]

[10] http://readwritethink.org/professional-development/strategy-guides/assessing-student-interests-strengths-30100.html [VISITED 15. 1. 2021.]

[11] https://www.scholastic.com/teachers/blog-posts/john-depasquale/2017/Student-Interest-Surveys-Getting-to-Know-You/ [VISITED 20.1.2021.]