BLENDED ROTATION LEARNING MODEL TO REINVENT MAINSTREAM CLASSROOMS

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Abstract

Despite the increasing migration waves of the last two decades, European countries have struggled to address the learning needs of migrant students. Intercultural models have faced challenges in implementation, leading to segregated schools. The EU Treaty emphasizes the need for continued educational support for migrant learners, but mainstream teachers often lack the necessary knowledge and skills. The current paper focuses on a European-funded project titled “Reinventing Mainstream Classrooms” (RE.MA.C.). It aims to address the teaching, learning, cognitive and social needs of a rather demanding educational context, the mainstream multilingual and multicultural classroom, providing equal opportunities for all, using new and emerging technologies. It presents and discusses a blended learning pedagogical framework that aims to transform and reinvent mainstream classrooms. The suggested blended rotation model is comprised of 4 stations: 1) Teacher Station, 2) Collaboration Station, 3) Independent Study Station and 4) Technology Station and takes into consideration the projects’ content, main aim and goals.

Keywords: intercultural, inclusive, mainstream classrooms, primary.

1 INTRODUCTION

In 2023, one would expect that due to the uprising and increasing migration waves of the last two decades, European countries would have been able to address the learning needs of migrant students. Not only this has not occurred, but there are sufficient challenges in the implementation of the intercultural model, which leads to anachronistic, ghettoized schools. Article 165(2) of the Treaty on the Functioning of the EU [1], emphasizes that ‘union action shall be aimed at developing the European dimension in education, particularly through the teaching and dissemination of the languages of the Member States’, while fully respecting cultural and linguistic diversity, signals the continued and rising educational support that should be provided to all SL learners/migrant students across Europe and beyond. While major bilingual population density can be found across European countries [2], very few of them are presenting promising learning outcomes. Migrant students are immediately or shortly after their arrival, placed in mainstream classrooms. This means that mainstream teachers have a significant role in their academic success [3]. However, most mainstream teachers present an overwhelming lack of knowledge of Second Language (SL) acquisition and multicultural education [4], [5], since teacher preparation programs have yet to catch up with this mainstreaming trend [6]. It has also been observed that teachers’ lack of teaching confidence in instructing migrant students, allows them to shift the responsibility to their SL colleagues making little or no effort in teaching these students [6], [7].

The current paper focuses on a European-funded project titled “Reinventing Mainstream Classrooms” (RE.MA.C.). RE.MA.C. aims to address the teaching, learning, cognitive and social needs of a rather demanding educational context, the mainstream multilingual and multicultural classroom, providing equal opportunities for all, using digital environments and new and emerging technologies. The presentation focuses on the second work package of RE.MA.C. which proposes a blended learning pedagogical framework to transform mainstream classrooms. The proposed framework is based on literature and best practices of blended learning addressing the needs of mainstream classrooms. The model takes into consideration the projects’ content, main aim and goals.

2 METHODOLOGY

This section presents and explains the methodology employed in order to conclude the proposed framework. The methodology consists of 2 steps which are described below.

2.1 Stage 1: State of the art

This stage involved a comprehensive review of various influential reports, articles, and books on online and blended learning in elementary, secondary and higher education institutions. It is important to clarify that there are no models developed for specific disciplines, thus there are no models specifically for the mainstream multilingual and multicultural classroom. A thorough examination of the most prominent blended and distance/online learning models was conducted. This analysis aimed to establish the foundation for an innovative pedagogical framework for distance/online and blended learning to address the teaching, learning, cognitive and social needs of a rather demanding educational context, the mainstream multilingual and multicultural classroom, providing equal opportunities for all, using new and emerged technologies. Consequently, a state-of-the-art literature review report was developed. The review presents the Blended Learning Approach by providing various descriptions and definitions provided in the literature. The first section of the literature review aims to clarify the concept of blended learning. Various advantages, benefits as well as challenges of designing blended learning environments are provided. The second section is focused on presenting and describing three blended learning models: the Community of Inquiry model, the SAMR model, and Laurillard's Conversational Framework. The aforementioned models guided the development of the suggested framework and provided guidelines for designing and developing the Blended Learning Environment for the current project. Finally, the review concludes with Different Types/Forms/Configurations of the Blended Learning Environments.

2.1.1 The Blended Learning Models

There are various Blended learning models described in the literature and implemented in various educational settings (elementary, secondary and higher education) such as the Five stage Model of e-learning ([8], [9]), the Community of Inquiry Model (CoI), ([10], [11], [12], [13]), the SAMR Model ([14], the Moule Model – The e-learning ladder [15], the Conversational Framework ([16], [17]). To address the needs of the RE.MA.C project, three models were mainly explained, discussed and described below.

2.1.1.1 Community of Inquiry Model

The Community of Inquiry (CoI) model is a theoretical framework that focuses on the development and maintenance of a meaningful online learning environment. It was developed by Randy Garrison, Terry Anderson, and Walter Archer and is widely used in the context of online and blended learning. The model is designed to understand and facilitate the process of creating a community of learners engaged in a collaborative and inquiry-based approach. The key components of the Community of Inquiry model include:

The **Cognitive presence**, which involves the development of critical thinking and meaningful learning experiences. It focuses on the construction of knowledge through exploration, integration, and resolution of conflicting ideas and encourages problem-solving and higher-order thinking skills.

The **Social presence**, which refers to the ability of participants to project their personal characteristics into the community, thereby creating a sense of personality and community. It involves building trust, open communication, and a supportive online learning community. Social presence helps create a sense of connection and belonging among learners.

The **Teaching presence** which represents the design, facilitation, and direction of the educational experience. It includes instructional design, organization, and facilitation of activities. The instructor plays a crucial role in guiding discussions, providing feedback, and creating a supportive learning environment.

The three presences—Cognitive, Social, and Teaching—interact dynamically to create a holistic and effective learning experience. The model suggests that an optimal blended/online learning community is achieved when these presences are balanced and interrelated. The goal is to create an environment that fosters deep learning and engagement among learners, even in the absence of face-to-face interaction. The Community of Inquiry model has been influential in shaping best practices for online and blended learning, providing a framework for educators to design and facilitate effective and engaging virtual learning experiences [10] [11] [12] [13] [18] [19] [20] [21] [22] [23] [24] [25].

2.1.1.2 The SAMR Model

The SAMR model, developed by Ruben Puentedura, is a framework designed to guide educators in integrating technology into the teaching and learning process. SAMR stands for Substitution, Augmentation, Modification, and Redefinition. It categorizes technology integration into four levels, each representing a different degree of digital transformation in educational practices.

Substitution: At the lowest level, technology is used as a direct substitute for traditional tools without any significant change in the task. For example, using a word processor instead of a paper and pen.

Augmentation: Technology enhances the task, providing a functional improvement over traditional methods. This might involve added features or increased efficiency, such as using spell-check in a word processor.

Modification: At this level, technology allows for significant task redesign. The use of technology not only enhances the task but also enables activities that were previously inconceivable without it. For instance, collaborative writing in real-time using cloud-based platforms.

Redefinition: The highest level of SAMR involves the complete transformation of the task, creating new possibilities that were inconceivable without technology. It goes beyond enhancement to fundamentally change the nature of the learning experience. An example could be students collaborating globally on a project through video conferencing and shared online spaces.

The SAMR model encourages educators to strive for higher levels of technology integration, aiming for transformative rather than merely additive uses of technology to maximize its impact on student learning and engagement [14] [26].

2.1.1.3 Laurillard's Conversational Framework

Laurillard's Conversational Framework is an instructional design model developed by Diana Laurillard, focusing on the dynamic and iterative nature of teaching and learning. The model is rooted in the idea of a dialogue or conversation between a teacher and a learner. It consists of six types of conversations that represent different stages in the learning process.

Discursive Guidance: In this initial phase, the teacher provides explicit instruction and guidance to the learner, presenting new concepts or skills.

Interactive Discourse: Learners actively engage with the content, asking questions and seeking clarification. This phase emphasizes interaction between teacher and learner to reinforce understanding.

Adaptive eLearning: Technology is integrated to adapt teaching materials based on learner responses, allowing personalized learning experiences and addressing individual needs.

Reflective Abstraction: Learners reflect on their learning experiences, linking new knowledge to prior understanding. This phase encourages metacognition and deepens comprehension.

Consolidation: The teacher helps learners consolidate their knowledge through practice, application, and feedback, reinforcing learning outcomes.

Interactive Feedback: Continuous feedback loops between teacher and learner contribute to ongoing improvement, supporting the refinement of understanding and skills.

Laurillard's Conversational Framework emphasizes the importance of dialogue and interaction in the learning process, acknowledging the role of technology in facilitating personalized, adaptive learning experiences. It provides a structured approach to designing effective teaching and learning interactions that promote deep understanding and engagement [16] [17] [18] [27] [28] [29].

2.1.2 Blended Learning Environments – Different Types

Blended Learning can take different forms on how to design and implement the learning activities and resources, between face-to-face and online learning. Blended online classes are used in different educational levels (elementary, secondary and higher education), and settings (formal, informal and non-formal) to help meet the diverse learning needs of students and provide greater flexibility in scheduling and delivery of instruction. There are various forms of Blended Learning types, such as: Blended face-to-face classrooms, Blended Online classes, the Flipped Classroom, the Rotation Model, the Self-blend model, The Blend – MOOC and the Flexible mode Course. The Rotation Classroom Model is described below [30][31][32][33].

2.1.2.1 The Rotation Classroom Model

The rotation classroom model is a blended learning approach in which students rotate between different learning stations or modalities. This model typically involves a combination of face-to-face instruction and online learning activities. In a rotation classroom model, students are divided into groups and rotate through different learning activities or stations, which may include teacher-led instruction, independent work, small group activities, and online learning modules. The exact structure of the rotation may vary, but the goal is to provide students with a variety of learning experiences that can cater to their individual needs and learning styles.

There are several variations of the rotation classroom model. One common type of rotation model is the "station rotation" model, in which students rotate through a series of learning stations that are designed to address specific learning objectives. In this model, students rotate between different learning stations, such as an online learning station, a small-group instruction station, and a teacher-led instruction station. There is the flex model, the individual rotation and the whole group rotation. In the Flex model, the students spend most of their time learning online but come to school for periodic face-to-face instruction and support. In the individual rotation model, the students rotate through a personalized schedule of online and face-to-face learning activities based on their individual needs. Finally, in the whole-group rotation model, the students rotate through a schedule of learning activities, including whole-group instruction, small-group instruction, and independent online learning.

Overall, the rotation classroom model can be an effective way to personalize learning and provide students with more opportunities to engage with material in a way that works best for them. The rotation classroom model for more personalized learning and flexible scheduling can be particularly helpful for students who need extra support or enrichment, like migrant students. However, it does require careful planning and coordination between teachers and technology staff to ensure that all students are receiving a well-rounded education [30][31][32][33].

2.2 Stage 2: Presentation, Discussion & Proposition

At this stage, during the 2nd transactional meeting of the project, a detailed presentation was prepared based on the literature review report. The presentation provided the partners with all the background information regarding the various Blended Learning Models as well as the various approaches/types of Blended Learning. Before deciding on which model(s) to adopt and how to adjust them to the project, it was extremely important for the partners to become familiar with the various blended learning models and approaches. The Frederick University team, which coordinates the specific task, provided a suggestion in regard to the blended learning framework. The suggestion focused on the adoption of the Rotation Blended Learning approach [30][31][32][33], enhanced with elements from three Blended Learning Models: the Community of inquiry model, The SAMR Model and Laurillard's Conversational Framework. Through an extensive discussion, and exchange of thoughts and ideas, the project partners agreed on the proposal made by Frederick's University team. The partners also proposed changes and improvements in order for the model to be aligned with the projects' content, main aim and goals. Their propositions were integrated and the consortium commonly agreed on the framework to be implemented.

3 RESULTS – THE SUGGESTED ROTATION MODEL FOR RE.MA.C

The suggested Blended Rotational Model to reinvent mainstream classrooms is briefly explained below. The suggested model is mainly based on the Rotation Blended Learning approach [30][31][32][33] where elements from the three Blended Learning models were integrated: mainly from Laurillard's Conversational Framework [16] [17] [18] [27] [28] [29] and some elements from the Community of inquiry model [10] [11] [12] [13] [18] [19] [20] [21] [22] [23] [24] [25], and the SAMR Model [14] [26].

Given the fact that the Rotation Blended Learning approach is employed, the suggested framework is comprised of 4 stations (explained below). A learning environment designer template was also developed (based on the Learning Designer Tool given through Laurillard's Conversational Framework, as the basis for designing the learning environment (further described below). Based on SAMR's model, the RE.MA.C suggested model aims to design learning environments enhanced with technology in order to achieve a high degree of digital transformation in the teaching and learning practice. In order to achieve the above, it mainly focuses on the modification (3rd) and redefinition (4th) levels. Finally, the Community of inquiry framework and Laurillard's Conversational Framework, provided the guidelines in order to focus on the collaboration, interaction and communication in three levels: 1) among the

participants, between the participants/learners and the instructors) and 3) between the participants/learners and the content.

3.1 The Stations

The model is comprised of 4 stations: 1) Teacher Station, 2) Collaboration Station, 3) Independent Study Station and 4) Technology Station (See Figure 1). The model is given in a circular form. An alternative representation of the model (linear) is presented in Figure 2.

Teacher station: At the teacher station, various activities can take place such as lectures, content explanation, directions, brainstorming, feedback, and addressing questions.

Collaboration Station: The purpose of the collaboration station is for students to work together, discuss, interact, etc. Thus, the current station may include board games, bingo cards, dominoes, quiz games with dice etc. For example, the following website can be used to get ideas in regard to the activities to be designed and performed at the collaboration station: https://www.toolsforeducators.com/. At the collaboration station, students may be provided with handheld devices such as tablets, and/or mobile phones for exercise completion.

Independent study: At the independent study station each student is expected to work on activities by himself/ herself, having the support of their personal lexicon and their vocabulary and grammar cards. For example, videos for grammar lessons should and can be included. For example, the following website can be used to get ideas in regard to the activities to be designed and performed at the collaboration station: https://www.youtube.com/watch?v=Oii8US3jf9g&t=69s.

Technology station: At the technology station, the students are expected to use RE.MA.C Lab, and the MILAGE+ Platform (The application of MILAGE). Various new and emerging technologies will be employed to perform the activities of this station. The current station is expected to be equipped with computers and/or tablets. The MILAGE+ Platform will be used for the following: Self-assessed tasks, a Forum for students and the Creation of the portfolio. The RE.MA.C lab has been already developed based on the Universal Design Learning Principles. Mainly using the H5P tool, the RE.MA.C Lab provides the opportunity to the educators and researchers to develop but not limited to the following types of activities: Multiple choice (with written, images, audio, and video files as options), True or false (with written, images, audio, and video files as options), Drag and drop (with written, images, audio, and video files as options), Matching questions (with written, images, audio, and video files as options), Essay or summary task with instant feedback, Timeline, Word grid, Crosswords, Image hotspots, Fill in the gaps, Sort the paragraphs task, Information wall for group working, Mind maps, Creation of shared chats per activity to undertake, Flashcards with images paired with questions and answers, not only written but also spoken (recorded), and Upload image, audio and visual files that can be accompanied with close-ended or open-ended quizzes. Finally, an AI tool is used in order to provide feedback on written essays.

3.2 The Learning Environment Designer Template

The application of the aforementioned Rotation model is expected to be implemented via careful design of the teaching and learning process. In order to address the above, a learning environment designer template was developed (based on the Learning Designer Tool given through Laurillard's Conversational Framework) as the basis for designing the learning environment (See Figure 3). The template takes into consideration the following: (a) language proficiency levels; (b) the language skills expected to be developed, (c) learning outcomes (based on Bloom's taxonomy), (d) the competencies developed based on Laurillard's Conversational Framework, and (e) the Democratic Culture of Council of Europe Framework. Educators and researchers in each partner country already use the template to develop and design appropriate educational material for RE.MA.C project. The delivery of each activity will be part of a specific station as described above (see Section 3.1).

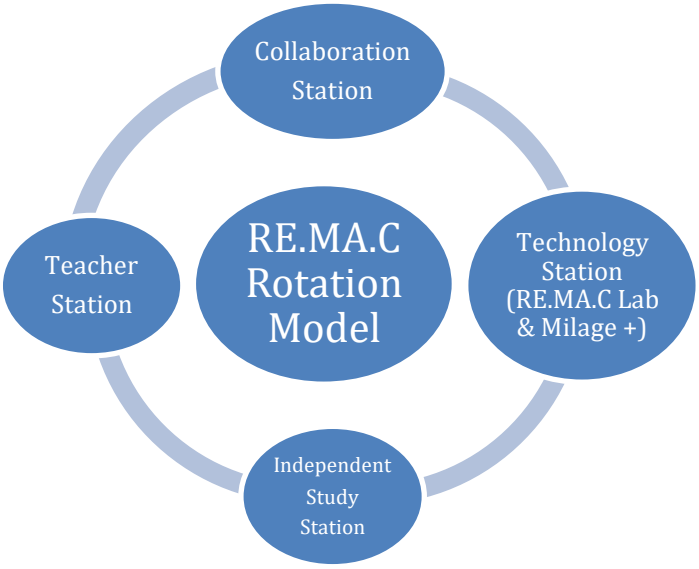

Figure 1. The suggested rotation model for RE.MA.C.

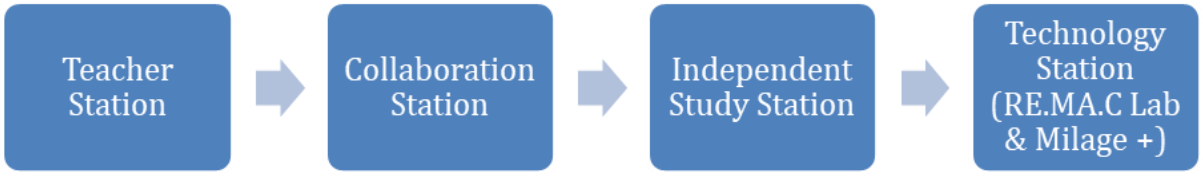

Figure 2. the Alternative: The suggested rotation model for RE.MA.C.

Levels	Task Code	Skills	Subskill	Duration	Title of Activity	Station (based on the rotation model)	Learning Outcome (based on Bloom's Taxonomy)	Competences (based on the Framework)	Type of Learning Activity (based on Laurillard's Model)
Native Speakers		Reading	pronunciation	Suggested 10-20 mins		Independent study			Acquire
		Writing	Vocabulary			Teacher station			Acquire
		Speaking	Vocabulary			Teacher station			Acquire
		Listening	Vocabulary			Teacher station			Acquire
A1		Reading	pronunciation			Teacher station			Acquire
		Writing	Grammar			Collaboration station			Acquire
		Speaking	Grammar			Collaboration station			Acquire
		Listening	Grammar			Collaboration station			Acquire
A2		Reading	Grammar			Collaboration station			Acquire
		Writing	Grammar			Collaboration station			Acquire

Figure 3: The Learning Environment Designer Template.

4 CONCLUSIONS

The educators and researchers involved in the project were trained in implementing the proposed pedagogical framework in designing blended learning environments enhanced with technology in order to address the challenges faced in the classrooms as mentioned above. The educators and researchers in the partner countries are now in the process of developing educational material employing the learning environment designer template. Face-to-face and online training took place in regards to the use of the

template, the RE.MA.C Lab, and the MILAGE+ Platform. Continuous training and support will be provided throughout the project to the educators and researchers.

It seems that the Blended Learning Rotational Model suggested by the current project have great potential to address the challenges educators face in mainstream classrooms. It aims to help educators develop the necessary knowledge and skills in order to be appropriately prepared to design, develop and deliver learning environments aligned to the needs and demands of the mainstream trend. It is aspired that the model will be the means to address the teaching, learning, cognitive and social needs of a rather demanding educational context, the mainstream multilingual and multicultural classroom, providing equal opportunities for all, using new and emerging technologies. The suggested model will be implemented and tested via the RE.MA.C project. Its implementation will be also evaluated for its effectiveness in addressing the goals of the project.

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