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Instructional Design of Foreign Language Blended Courses

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Abstract

The article deals with different models of virtual environment integration in the educational process, including those in the National Research Tomsk Polytechnic University. The paper focuses on the motivational reflective model of electronic course design for foreign language teaching purposes. The authors describe the specifics of the five stages / structural elements of the model, evaluate evidence from experimental research, and offer a time-plan for foreign language five-stages-courses in blended learning.

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1. Introduction

Blended learning and its forms change rapidly and constantly because it is an effective way to give students a personalized learning experience, to allow them to acquire self-determined knowledge in the constantly renewing open world of education and to operate in the virtual learning environment of their universities and high schools.

Educational features of information and communication technologies have made it possible to build different models of integration of digital content into the educational process. The approach to combining face-to-face (f2f) instruction with online learning has yielded strong results since officially being researched as an education strategy. In fact, according to results of most studies (Richards 2012; Staker, & Horn 2012; Gleason, 2013; Wilson, 2014, etc.) blended learning classes produce better results than their f2f, non-hybrid equivalents. This may be partly due to the fact that this rapidly growing model not only increases the flexibility and individualization of student learning, but also allows teachers to expand the time they spend as facilitators of learning. High schools make the switch to blended learning for a variety of reasons.

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Universities offer various combinations of models of digital content integration in the educational process. Thus the ratio of classroom and electronic components can vary and depends on many factors: the specificity of the discipline, its objectives, conditions, and forms. We define the problem of this research as the following: the combination of f2f and e-learning should be carefully organized and have a distinct structure. The organizational and structural aspects of blended courses determine the achievement of optimal learning outcomes, because all elements of the educational process must interact and complement each other, forming an integral unit. The electronic environment helps to organize students' activities, offering types of assignments that are not available in the f2f form (chats, wikis, forums, etc.) (Prokhorets, & Plekhanova, 2015). Tutors and course designers, however, often give more attention first and foremost to the technological capabilities and advantages of gadgets and network platforms and forget that the main goal of a virtual environment is educational. Beyond that there is no unified foreign language course structure in a virtual learning environment based on stages established on psychological and pedagogical principles. Practical observations have shown that the sequence of learning stages in blended courses and the following development of skills do not always comply with basic academic requirements on the progression of the learning process in foreign language teaching (FLT), which raises difficulties in learning and slows down the development of skills and competencies.

This research will describe a model for unified instructional course design another issue is the timing of every course element in blended format.

The main **objectives** of this research are:

- to analyze different existing blended learning models and describe these in the National Research Tomsk Polytechnic University (TPU);
- to offer an example of a model based on the stages of instructional design of electronic foreign language courses for Russian and international students;
- to study the evidence from experimental research and to use this base for timing developments in blended learning.

Obtained results will show which stages are more difficult for cognitive retention of auditory and virtual material and the related changes of participants' activity and their motivation; and will prepare practical advice on how to divide the whole learning time in the curriculum for blended courses in f2f and virtual format.

The article consists of 5 main sections, a conclusion, and a bibliography. It begins with a general review of blended learning models described in the literature, continues with the explanation of models and electronic courses (EC) used at TPU, and concludes with an introduction to the motivational reflective model and the structure of five-stage-courses, including some experimental data analysis.

2. Blended Learning Models

Research of blended courses has shown that learning can be beneficial for students in a number of ways. For example, Christy Wilson (2014) describes the following advantages of blended learning: students have the ability to spend their class time collaborating with other students, receiving additional support from the teacher, or working on hands on projects with their peers. An enriched classroom with hands-on activities is possible with blended learning. Blended learning offers many opportunities for both the teacher and the student that a traditional brick and mortar classroom may not. With the increasing demands of state standards and busy school days, blended learning permits students to learn a portion of the academic content at home and gives teachers the ability to engage students in a richer, deeper, and more meaningful context in the classroom. Jesse Gleason (2013), exploring blended and online language learning studies, identified that blended learning can positively impact learner autonomy, improve student attitudes and motivation, and enable resource flexibility , such as more efficient allocation of time and space.

There are different variations of typological models of learning with virtual content. Their number varies from 3 to 6 models. Table 1 presents a brief overview of some of the typologies with the aim of identifying their fundamental similarities and differences.

Table 1. Variations of the blended learning model typologies.

Griff Richards, Athabasca University, 2012	**Face-to-Face Driver Model** The introduction of online instruction is decided on a case-by-case basis, meaning only certain students in a given class will participate in any form of blended learning. **Rotation Model** Students rotate between different stations on a fixed schedule – either working online or spending f2f time with the teacher. **Flex Model** Material is primarily delivered online. Although teachers are in the room to provide on-site support as needed, learning is primarily self-guided, as students independently learn and practice new concepts in a digital environment. **Online Lab Model** It is used for helping students complete courses, including those not offered at the specific school site. Students learn entirely online but travel to a dedicated computer lab to complete their coursework. Adults supervise the lab, but they are not trained teachers. **Self-Blend Model** Popular in high schools, it gives students the opportunity to take classes beyond what is already offered at their school. While these individuals will attend a traditional school environment, they also opt to supplement their learning through online courses offered remotely. In order for this method of blended learning to be successful, students must be highly self-motivated. **Online Driver Model** At the opposite end of the spectrum from f2f driver is online driver, which is a form of blended learning in which students work remotely and material is primarily delivered via an online platform. Although f2f check-ins are optional, students can usually chat with teachers online if they have questions.
Twigg , 2003, Cited by Yiran Zhao and Lori Breslow, 2013	**Replacement model** F2f lectures are substituted either partially or fully by online material, and class meeting time is reduced. The most common practice is to require students to watch videos online prior to coming to class and/or to complete some type of assignment. The videos come in different forms. When students are asked to learn material online that had previously been delivered via lecture, f2f class time can be used in several different ways. **Supplemental model** This model asks students to attend the same number of class meetings, but to access technology-based materials outside of the classroom as additional resources. These supplements can be specifically designed or commercially available products for a specific discipline. **Emporium model** Students work solely online but within a "learning resource center". **Buffet model** This model provides students with a menu of learning activities in both f2f and online formats. Students can choose a combination of materials that suits their own objectives and style.
Innosight Institute,2012 (Heather Staker Michael B. Horn)	**Rotation Model** Students within a *single* class rotate between online learning and other learning modalities, either on a fixed schedule or at the instructor's discretion. Most of the learning still occurs on a physical (brick-and-mortar) campus. **Flex Model** Students switch between learning modalities on a customized, fluid schedule that uses online learning as its cornerstone. Similar to the Rotation Model, learners still learn primarily on-campus, but under the Flex Model *every* class is divided into online and offline components. **Self-Blend Model** Students choose to take one or more courses entirely online to supplement their traditional courses and the teacher-of-record is the online teacher. Students may take the online courses either on the brick-and-mortar campus or off-site. This differs from full-time online learning and the Enriched-Virtual model (see the next definition) because it is not a whole-school experience. Students self-blend some individual online courses and take other courses at a brick-and-mortar campus with f2f teachers. **Enriched Virtual Model** Learning is divided between online and offline components. Although face-time is required between the student and teacher, in the Enriched Virtual Model, the student does not necessarily come to campus every day.

On the basis of these model examples, one can see that from one perspective the models are varied, but from another perspective the analysis shows that many of them merely define the same categories with different terms and a common terminology in the definition of models does not exist.

In addition to considering the age of the students, the reasons for choosing a blended model generally dictate which of the models are implemented.

Despite the numerous benefits of blended learning, questions of how to design the blended course and how to combine both the f2f and the technology-enhanced component of blended learning in the most optimal way are discussed by course developers, teachers and researchers.

3. Models and Types of Blended Learning Courses at TPU

Each university or educational institution can choose its own way of instruction in a virtual learning environment be it blended learning of different models or online/distance learning. The decision could be determined by geopolitical factors, sociocultural context, educational traditions of the country, or some psychological features of the student groups which will be taught, such as:

- country/city location and their distance from the native language countries;
- learning environment and scheduling (number of compulsive f2f lessons per week/ CPD Hours, credit points for each subject);
- specifics of the student group including psychological aspects, needs, motivation, etc.;
- foreign language level;
- infrastructure of the high school institution, possibilities in terms of technology and virtual environment systems.

At TPU there are three existing models of integration of traditional and virtual learning environments of EC depending on the educational aims: web-based, blended courses and full online learning/courses. Accordingly, the design or redesigning of electronic courses varies. The educational value of any specific virtual session in each model/type could be seen in terms of the degree of course objective achievement, time-management efficiency and personal satisfaction of the course participants including of the teacher. There are 3 main types of EC according to the models. The first is called a web-based course, the second is blended learning courses, and the third is online /distance learning courses. The authors hold the opinion that all these types have features of blended learning to a greater or lesser degree. The teachers must state what type of EC to choose depending on the skills and competencies students already have, such as the strength of their communication skills, independent learning skills, ethics/responsibility, teamwork, flexibility, critical thinking skills and IT-skills in the subject area.

The models for blended learning course planning at TPU are described below. There are some general outlines with features presented by the Griffith Institute for Higher Education (Bath, Bourke, 2010).

Model/type 1

Virtual technology is used to facilitate course management and resources for learner support, for example, to provide information and resources to students (e.g., lecture notes or recordings, assessment guidelines), and to perform basic administrative functions (e.g., announcements or course emails) (Bath, Bourke, 2010). We speak here about web-based EC, whose main goal is to deliver the learning content that provides for different learning styles: exercises and tasks for students who have a lower level in a foreign language and get behind, or on the contrary who have learned more than their fellow students. There are supplementary Internet resources for self-directed student work in local virtual or net platforms, such as web addresses that support lessons and courses. The content of web-based EC can be used as a means of activating background knowledge, for example, in comparison with, or in addition to, flipped classes.

Model/type 2

Electronic resources and courses in the university's virtual learning environment are used to enrich the quality of the student learning experience through interactive learning activities beyond those attainable through f2f classroom interactions. These include utilising technology to support communication and collaboration, assessment and management of the course (Bath, & Bourke, 2010). What is meant here is blended EC. Blended learning integrates offline interaction methods and online interaction methods, so material can be presented through both an asynchronous and synchronous format. Blended learning integrates learning programs in different formats to achieve a common goal. Blended learning integrates synchronous and asynchronous (multimedia, online) learning activities. There is a large number of possible ways to combine synchronous and asynchronous delivery environments and interaction methods (Klink, 2006). The choice of blended learning models depends on the learning environment, the common goals, and traditions of FLT in each country.

Model/type 3

A virtual environment is used to support learning that is largely self-directed but also involves the use of interactive and collaborative learning activities. In this mode courses are delivered fully online. There are many printed materials in electronic versions - textbooks, recommended readings, manuals, reference materials, etc. including the educational content given by the teacher in the f2f stage of blended learning courses.

Our research deals with foreign language EC for different students at Tomsk Polytechnic University: bachelor and master, technical and humanities students, international students in different subject areas. Virtual educational courses differ according to the model type, but nevertheless, the instructional design of any course is based on a scientific and pedagogical analysis of learning strategy research and instructional methodology at universities.

4. Motivational Reflective Model and Five-Stages-Courses

As the basic principal of EC design, the authors have developed the Motivational Reflective Model (further MRM). Courses based on the MRM are called Five-Stages-Courses (FSC). This research deals with blended foreign language courses, but the MRM and FSC could be used in every other subject area of international education.
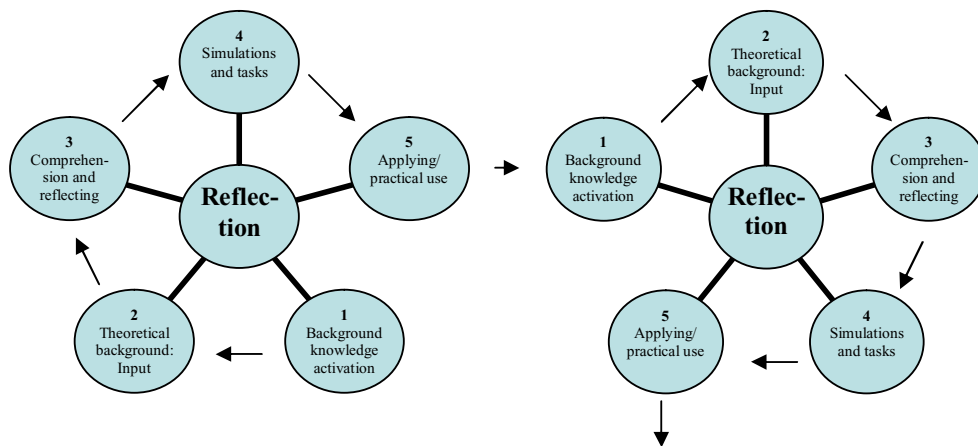

Fig. 1. Diagram of the elements/stages of the instructional design of blended courses based on the MRM.

As one can see in Figure 1 there are 5 interrelated stages or structural elements in this model. The main goal of the first structural element is to activate students' background knowledge to make it easier to learn and master new material. Students respond in a foreign language to the related questions on different themes, hypothesize about the statements or visual elements including key points of the following course, compile glossaries and/or vocabulary, etc. They take a part in a forum and are ready for the next part of the course. Teachers have a low profile at this stage.

The second structural element means the input of the theoretical background of materials in different forms. The learning objectives are to get acquainted with new material as a base for the following course. The student-teacher relationship differs from the first structural element of MRM: the student's main activity is to receive new knowledge and ideas; the teacher's is to be active and lead the process. The instructional strategies used in virtual and live blended classes are presentations, video or video broadcasts, mini-lectures, interactive lectures, and etc.

It is not rare that after presenting new material comes a task or even an assessment both in f2f or the virtual classroom. Our research takes the position that such approaches have no purpose and disturb the future motivation for learning. Before a teacher asks what students know, what they can do and how they use the material, it is important to make sure that students have understood the material, and to check what and to what degree they have understood in order to get to the bottom of problems and difficulties. We call this structural element "Comprehension and reflecting" and have in mind here the semantization of the given material and working with

vocabulary. Such tasks as gap filling, multiple choice, or matching may be used, but we don`t speak here about assessment as a control or test of skills, but rather as a check for teachers to find out if students have any problems in understanding the foreign language material or that of their own subject area (if they study foreign language for specific fields).

The structural element "Simulations and tasks" has to develop skills and competencies depending on the main learning objectives of the course. The duration of this stage is the longest because it is a very important learning element in the whole course and/or model structure. There are many different exercises ranging from pattern drills in grammar and vocabulary up to simulations, guided discussions, oral and written individual and group work, and other tasks in reading, writing, speaking and listening in the foreign language.

Practical use of the developed skills and competencies based on the newly taught knowledge is the core of the last structural e element. The instructional strategies include virtual labs, debates, threaded discussions, student-led discussions, projects and other foreign language activities based on real-life situations.

Each structural element has its own place and repeats in each course module or theme unit. Structural element 5, however, will influence structural element 1 of the next course module/unit following the condition of consistency in learning progress and in course design as a whole. In this way, the cyclicity of course design and learning reflection will be established and promoted.

The reflection is compulsory in each stage and can be led individually or in groups. The second compulsory condition is continuous appeal to the background knowledge of course participants irrespective of the course stage. It facilitates understanding and enhances participants' motivation, which is why we speak about motivational reflective course design.

The element "Application" must not be replaced with the concept of "Evaluation" because partial evaluation and self-assessment are already present in the previous elements of the MRM. Formative and summative assessments have their place in each structural element.

Reflection is being held upon completion of each stage. Reflection is performed by using reflection organizers – lists in which students put analysis of the acquired experience, group and pair work results, their progress in completing assignments for a certain stage; they also propose ideas on enhancement of their own productivity within the course.

5. Evaluation of the Empirical Results of an Example of the Implementation of the Reflective Model and Five-Stages-Courses

The practical approval of this study was held in autumn 2014 – spring 2015 at TPU with students and staff (teachers who had taken part in training courses of blended learning in high schools) on the virtual platform Moodle. Web-based (WB) and blended learning (BL) courses "Instructional Design of Blended Learning Courses" (BL), "Foreign Language for Ph.D. Students" (WB) "German as a Second Foreign Language" (WB) "Foreign Language for Specific Purposes" (BL) were led by the authors. The courses were instructionally designed on the basic of the MRM. Each course had approximate 3 modules (units) with a different number of steps corresponding to the structural elements depending on the difficulty. For example, background knowledge activation can include 1 logical step with 2-3 tasks and "Simulation and tasks" of up to 5 steps (from grammar and vocabulary skills to writing or speaking competencies).

Figure 2 shows participants' activity in a virtual learning environment along with the changes of motivation toward foreign language learning while studying FSC in a blended format of different types (web-based and blended). The arithmetic means of virtual activity of 6 student and teacher groups is presented. The results were received using a participant questionnaire survey (for the motivational aspect) and electronic data analysis (for the activity aspect).
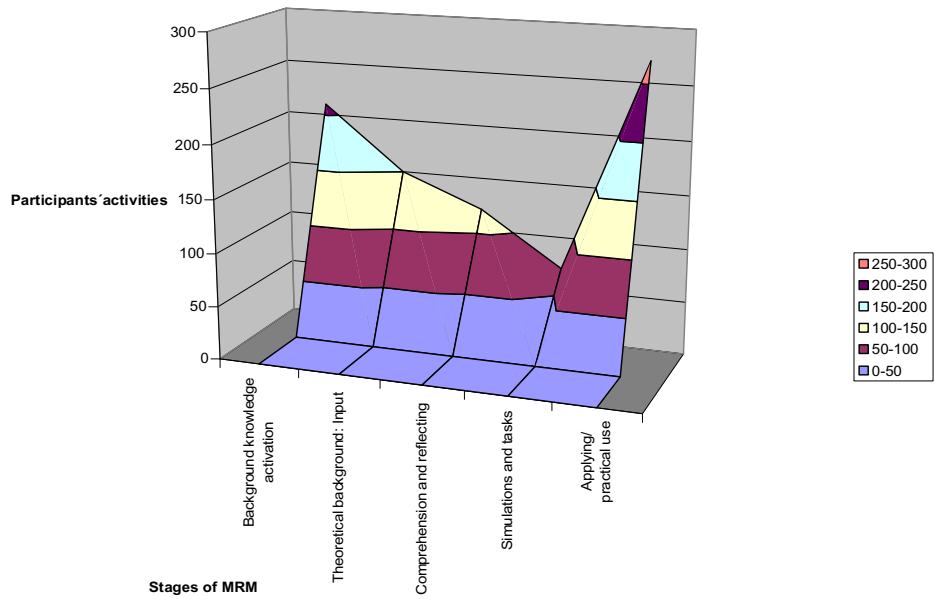
Fig. 2. Participants' activity in a virtual learning environment while studying FSC.

Evidence of change in motivation and participation in a virtual learning environment is observed while working with different student groups. It confirmed a rise in motivation and activity in the first structural element; than a continuous decline to element "Simulation and tasks", and finally a rapid increase in the application and practical use of knowledge. These empirical results made it possible to conclude some ideas about one of the problems of educational technologies discussed in modern academia: the time and work volume correlation in different blended learning formats. On the grounds of experimental evidence and scientific analysis the timing of blended learning FSC in foreign language was developed.

It is possible to suggest the timing that is percentage ratio between the time devoted to blended learning and face-to-face stages as well as the time within each stage. In the table each stage is represented as an independent component of pedagogical design of online course and is a learning unit which equals to 100%. Thus, percentage ratio for each phase of the model is demonstrated.

Table 2. FSC-Timing for foreign language blended learning.

EC by model types	Stages / structural elements of MRM				
	1	**2**	**3**	**4**	**5**
	Background knowledge activation (virtual/f2f)	**Theoretical background: Input** (virtual/f2f)	**Comprehension and reflecting** (virtual/f2f)	**Simulations and tasks** (virtual/f2f)	**Applying/practic al use** (virtual/f2f)
EC based on **model I** (web-based courses)	10/90	20/80	40/60	30/70	20/80
EC based on **model II** (blended learning courses)	45/50	45/55	45/55	40/60	45/55
EC based on **model III** (online/distance learning)	100/-	90/10	100/-	90/10	70/30

Now we explain the table with the example of structural element 1 "Background knowledge activation". This stage is represented in a virtual learning environment in different models from 10 up to 100 %, which depends on

the specifics of the model. So according to model I (web-based EC) "Background knowledge activation" roughly 10 % of the work volume is on a virtual platform and 90 % is in traditional f2f format.

In the learning process based on model I the main work goes on in the classroom, and the virtual environment is just a motivational means to help optimize time management, and at the same time to achieve higher efficiency through students' independent study. In structural element 1 "Background knowledge activation" the basic motivational groundwork for the following course will be provided, as well as teaching of the theoretical background.

In foreign language courses (from practical experiences at TPU English, German or Russian as Foreign Language courses for international students) it could be such tasks as following:

- to give on forum or at the start of the course (in the first step) an intrigue phrase in foreign language, student give an interpretation of it;
- teacher puts questions to students relating with the following learning material;
- students formularize suitable questions themselves in the virtual environment with following discussion f2f;
- a picture or a photo suitable to the module theme are given and students hypothesize about it ("What is it? What theme will we have next days? What subject do you see here? Try to describe this subject" etc.);
- research of web-links of some Open Educational Resources (OER) near to the main module/unit subject with different tasks including video or other multimedia.

After the virtual work comes the classroom work which takes more time, includes other oral and written tasks, and has reflection as necessary stage.

According to model 2, tasks for preparing for further classroom work are given about a week before classroom meetings: for example, to take a small foreign language test on the upcoming theme which helps to master vocabulary on the following topic. Students can be required to create their own individual or group glossaries online based on specific criteria. A discussion of results is held at the first f2f meeting; it may be led in groups, pairs, or individually. The reflection is done in the electronic environment, is evaluated by the teacher and classmates, and continues in the classroom in an open form.

When students take part in the courses of model 3 they have no opportunity to meet the teacher f2f but they have to study the course content. In this case students study autonomously only through online tutoring before the f2f sessions; which is why it is important to arouse interest in the future course content and in this way increase their motivation and learning activity. Different instructional strategies and student activities can be recommended at this MRM stage, for example: answering a list of thought-provoking questions; answering a list of questions given by the teacher or made up by participants; writing their own list of questions or a short essay given the title of the topic and presenting it in the forum; answering the questions of others; preparing term glossaries and comparing them with others; building their own vocabulary lists; and etc. Reflection takes place entirely online, with the participation of the teacher and other course participants.

As future directions for our research we suggest the development of instructional strategies and a list of possible student activities for each stage and/or structural elements of the MRM for FSC, as well as the timing-describing in details for each course type, stage and model.

6. Conclusion

Due to the empirical research based on real practical blended foreign language and training courses the following main conclusions can be drawn:

1. The presented MRM of various types (web, blended, and online) makes it possible to unify EC in five stages.
2. The results of empirical research of course participants' activity and motivation level in FSC made it possible to develop a schedule for each stage of the MRM offered in this article.

Harmonization of courses in a unified structure facilitates learning and results statistics. A scientific approach to course design guarantees conceptual learning of the course material, eliminates random and chaotic design of material content. In the meantime, each course developer can choose and interpret the course content as he or she wishes in accordance with the group's needs and interests (more video and animations, or more graphics and scientific posters, etc.).

The significance of the research results can be described as follows. For foreign language courses it is important to have one structure which consists of learning stages based on psychological and pedagogical principles. It makes it possible to determine the activity where necessary, and to facilitate students' motivation for foreign language learning, which is the main condition for the effective development of skills and competencies.

However, the fact that students become aware of the value ofself-evaluation along with evaluation done by the instructor can be considered as one of the accomplishments of the course. Considerable increase in activity in knowledge and skills application stage can be noted. This is one of the main objectives of a foreign language learning which is being accomplished within the course.

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