

GEOGRAPHY STUDENTS' PERCEPTION ON IMPLEMENTATION OF MULTIPLE INTELLIGENCES IN A CLIL COURSE

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ABSTRACT: The paper focuses on Geography students' perception on the implementation of multiple intelligences in a CLIL course designed at the Faculty of Geography, University of Belgrade. It starts with an overview of Howard Gardner's theory of multiple intelligences and examines its implications for classroom activities, materials design and cross-curriculum teaching. Being cognitively demanding, CLIL tasks require implementation of several types of intelligence. In addition to verbal intelligence, which is prevalent in foreign language teaching, other intelligences that assist in processing of non-linguistic content are also activated. For example, logical-mathematical intelligence is used in problem solving, hypothesizing, collecting and classifying data, whereas spatial-visual intelligence prevails in interpreting and comparing charts and tables. The paper presents survey results of students' perception on the MI application in a language course. We examined 150 first-year Geography students who attended seven CLIL classes in which multiple intelligences were applied. The survey instrument was the explorative questionnaire designed to examine perceptions of Geography students on the MI application in a CLIL setting. The data obtained from the survey demonstrate that the use of specifically designed teaching materials and tasks, which involve problem-solving, creative and critical thinking, fosters effective learning of both foreign languages and content and enhances students' motivation.

Key words: multiple intelligences, CLIL, English language, geography

INTRODUCTION

Intelligences shape the ways in which individuals take in, memorize and use information. Foreign language teachers as well as teachers of other subjects have noticed that their students react in different ways to activities done in the class and that each student has his/her own learning style. When teaching, focus is on the linguistic intelligence exclusively, some students may show excellent results – those who are strong in linguistic intelligence. However, students who are strong in other intelligences can be more encouraged to take part in classroom activities when these are carefully balanced to include other intelligences as well. Therefore, activities should include different exercises and tasks that allow students to approach language learning from their strength areas. Class materials and activities should be customized so that all students have the opportunity to learn and to demonstrate what they have learned – not just those who are gifted with words i.e. those who are strong in the traditionally favoured linguistic intelligence (Prnjat & Marković, 2014, p. 115). In particular, teachers who work with large mixed ability classes should adopt appropriate teaching techniques in order to help their learners study at their own pace and provide the opportunity for students of all linguistic abilities to demonstrate their different talents and creativity. In CLIL classrooms, linguistic and interpersonal intelligences, which are prevalent in language teaching, can be supported by other intelligences such as logical / mathematical (e.g. problem solving, predicting, collecting data, classifying, etc.) and visual / spatial (e.g. use of symbols, charts and graphs) (Ibid.).

MULTIPLE INTELLIGENCES THEORY

Howard Gardner developed Multiple Intelligences (MI) theory and in his book *Frames of Mind: Theory of Multiple Intelligences* implied that "...human beings have particular intelligences because of informational contents that exist in the world..." (1993, p. xxi) and that "...some individuals will develop certain intelligences far more than others; but every normal individual should develop each intelligence to some extent..." (Ibid. p.278). All intelligences operate simultaneously since they complement each other. Gardner proposed the following seven types:

1. Intrapersonal intelligence
2. Interpersonal intelligence
3. Linguistic intelligence

4. Logical-mathematical intelligence
5. Spatial-visual intelligence
6. Musical intelligence
7. Bodily-kinesthetic intelligence

Intrapersonal intelligence is the ability to understand oneself, to distinguish complex inner feelings and to use them to control one's own behaviour. Students who are strong in this type of intelligence prefer to work alone, at their own pace and to pursue their own interests. The best type of learning activity is individual work (e.g. personalized project).

Interpersonal intelligence is the ability to identify and respond appropriately to the emotions and moods of others, to understand their intentions and desires. Students with a well-developed interpersonal intelligence are able to work effectively in groups and to establish good rapport with other members. They often prefer to lead teams and to mediate. The best activities for this type of learner are tasks performed in groups or pairs, interviews, debates and discussions (Prnjat & Marković, 2014, p. 114).

Sensitivity to spoken and written language (sound, rhythm and meaning of words) forms the basis of linguistic intelligence. Students with a well-developed linguistic intelligence are particularly good at reading, writing and retelling stories and learn best when they hear, say or read words and phrases.

Logical-mathematical intelligence is the capacity to detect and understand logical and numerical patterns. It is associated with scientific thinking and logical reasoning (Ibid.). Students strong in this type of intelligence are good at performing mathematical operations, discovering patterns, analyzing, systematizing, classifying and prioritizing data. The best activities for these students are: puzzles, problem solving activities, games such as treasure hunts, etc. (Puchta & Rinvoluceri 2005).

Spatial-visual intelligence is the capacity to perceive the spatial (visual) world accurately. Students whose spatial-visual intelligence is well-developed are good at arts and crafts. The most suitable activities for these students are the ones that involve working with symbols, graphs, diagrams, maps and geometrical forms (Ibid.).

Musical intelligence is the ability to appreciate various musical patterns: melody, beat, rhythm and tone. Students with well-developed musical intelligence easily understand various forms of musical patterns and prefer listening to music, singing and playing instruments.

The ability to use one's body or parts of the body skillfully and in highly differentiated ways forms the basis of bodily-kinesthetic intelligence. Students strong in this type of intelligence prefer to move around the classroom, to do things and they usually excel in class activities such as miming and performing with realia (Ibid.). Every human being possesses all these types of intelligences. However, because of genetic variations and experience gained in early childhood, no two people have the same intelligences equally developed.

Multiple Intelligences in the CLIL Classroom

Gardner's Theory of Multiple Intelligences is particularly significant for CLIL educational settings (in which a foreign language is taught simultaneously with content of a curricular subject. CLIL materials and activities are often rather cognitively demanding and require implementation of several types of intelligence (e.g. logical-mathematical intelligence for hypothesizing, collecting and classifying data; spatial-visual for interpreting and comparing charts and tables, etc.).

Besides developing students' linguistic and general academic skills, CLIL contributes to development of cognitive abilities as well. Also, studies have shown (ICF Report 2014, Marsh 2002) that integrated learning improves the ability to learn and study, it promotes students' responsibility, confidence and learner autonomy and provides "a holistic educational experience" (Coyle, Hood & Marsh, 2010, p. 1).

TEACHING UNIT

In this section, we present a teaching unit in which logical-mathematical and spatial-visual intelligences are used alongside linguistic intelligence. The unit was designed for the students at Geography Department at the Faculty of Geography, University of Belgrade. It consists of a text on the history of urbanization in Europe and exercises designed to test reading comprehension. Also, students do exercises that involve drawing city plans and performing calculations.

Teaching Aims

- creation of interactive teaching and learning environment that involves the use of logical-mathematical and spatial-visual intelligences so that students who are strong in these intelligences can demonstrate their talents and creativity (Prnjat & Marković, 2014, p. 115);
- promotion of cooperative learning (pair and group work) and peer assessment;
- acquisition of new vocabulary (human geography, demography, cartography).

Materials and Activities

For purposes of brevity, only some materials and tasks are presented in the paper.

Activity 1 (individual activity)

Students read five excerpts from the text on the history of urban development in Europe. The excerpts and subsequent comprehension exercises are based on the material taken from *English in Social Studies*.

1. The first true cities **appeared** about 5000 years ago, in the food-producing communities of the Middle East. They **were** much larger and more densely populated than any previous settlement. A complex hierarchy of social classes and specialization of labor **developed**. Moreover, the need to keep records **led** to the development of writing and arithmetic. Arts **flourished** as well.
2. Three main phases in the growth of the West European city **can be distinguished**. The first **is** the medieval phase, which **extends** from the beginning of the eleventh century A.D. to about 1500. The second **includes** the Renaissance and Baroque periods and **can be traced** from about 1500 to the beginning of the nineteenth century. The third **marks** the beginning of the modern era, extending from the early nineteenth century to the present day.
3. Every medieval city **began** as a small settlement that **grew** round a geographical or cultural focal point: a stronghold, a cathedral or a monastery. In districts where travel and trade **were established**, the focal point **was** a market, a river crossing, or a place where two or more trade routes **converged**. In studies of urban geography, the oldest part of a town **is referred to** as the nuclear settlement. There **are** many small towns in Europe where it **is** still possible to trace the outline of the original nuclear settlement.
4. The decision to establish a settlement in a particular place **depended** basically on two factors: politico-cultural and economic. The builders **sought** a prominent hill site or a promontory surrounded on three sides by sea, river or marsh. Such a site **dominated** the surrounding countryside and **had** the benefit of natural defenses. On the other hand, economic activities **required** easy access, room to expand, and contact with the main trade routes. For this reason, most settlements **were built** by navigable waterways.
5. All urban settlements **must meet** a number of basic requirements. They **must be** reasonably compact in form, so that all parts of the town are easily accessible. There **ought to be** adequate space between the buildings for pedestrian or vehicular traffic. Perhaps most important of all, citizens **must have** security so the earliest settlements **were often attached** to an existing castle. At a later stage, towns **founded** in the later Middle Ages **were surrounded** with walls of their own.

Activity 2 (pair / group work)

Students read the statements and decide which paragraph each statement refers to.

1. Medieval cities began as settlements built around geographical, economic or cultural focal points, such as churches, markets, river crossings or trade route junctions.
2. Politico-cultural and economic factors were both important in selecting a site for a medieval town.
3. Easy access and security have always been a vital consideration in the development of urban communities.
4. The growth of cities made possible the development of a hierarchy of professional classes.
5. The Renaissance and Baroque phase of the European urban development lasted for about three centuries.

Activity 3 (pair / group work)

Students draw the timeline of the urban development in Europe.

Activity 4 (pair work)

Students study the symbols representing the shapes of city fortifications and street patterns. Then they read a description based on the diagram and fill in the blanks.

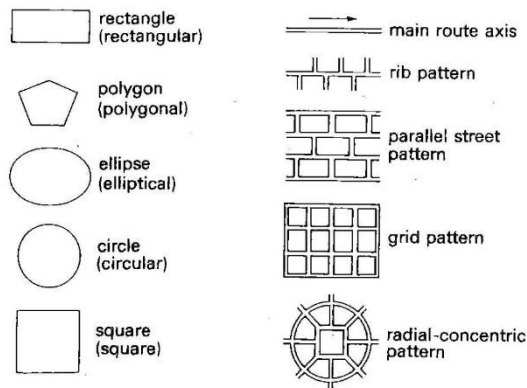


Image 1. Symbolic Representation of the Shapes of City Fortifications and Street Patterns

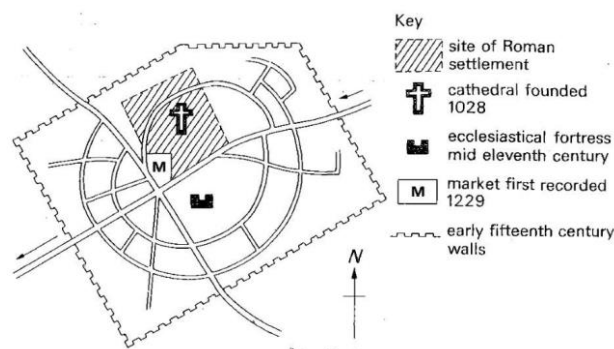


Image 2. A Historical Diagram of a Medieval Town in Europe (Town A)

Town A developed on the site of a (1) _____ on a main route axis running from the north-east to the north-west. The nucleus was a (2) _____ founded in 1028 and a (3) _____ built in the mid eleventh century. A (4) _____, south-west of the cathedral, was first recorded in 1229. The (5) _____ were built in the early fifteenth century in the form of an irregular (6) _____. Further growth tended to radiate outwards from the cathedral and market place, thus forming an example of the (7) _____ pattern of urban development.

Activity 5 (pair / group work)

Students read three descriptions and draw diagrams. They present the diagrams to the class and engage in peer assessment. For purposes of brevity, only one description is presented in the paper.

Town B developed on the main east-west axis running from Town A to Town C. The settlement was located on a promontory surrounded by marshes on two sides, and the nucleus of settlement was a twelfth century fortress and a church founded in 1062. A market, to the north-east of the church, was established by 1136. The fourteenth century walls form an almost perfect rectangle. The streets are based on a rectangular plan and are spaced at more or less equal intervals. The town is a good example of the 'grid pattern' type of urban development.

Activity 6 (pair / group work)

Students study three diagrams and write descriptions based on them. They present the diagrams to the class and engage in peer assessment. For purposes of brevity, only one diagram is presented in the paper.

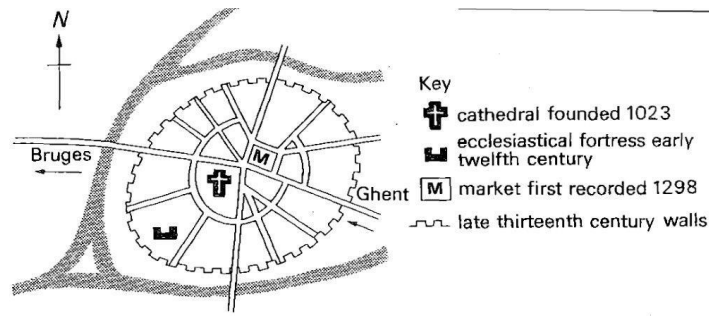


Image 3. A Historical Diagram of a Medieval Town in Europe (Town C)

RESULTS AND DISCUSSION

The main objective of the study was to determine perceptions of Geography students on implementation of multiple intelligences in a CLIL course. The study tasks were to identify: 1) satisfaction with this type of activities; 2) perceived difficulty of this type of activities; 3) perceived benefits of this type of activities. The sample consisted of 150 first-year Geography students who attended seven CLIL classes in which multiple intelligences were applied. The survey instrument was the explorative questionnaire (Likert-type scale questions).

The study results show that a vast majority of students (68%) expressed a high level of satisfaction with the teaching and learning activities. Only three students considered this type of activities, drawing city plans in particular, a waste of time (they did not complete the tasks). Also, low level of satisfaction expressed by other nine students can be attributed to their lack of interest in drawing.

Table 1. Students' Overall Satisfaction

Not at all satisfied	2 %
Slightly satisfied	6%
Moderately satisfied	24%
Very satisfied	56%
Extremely satisfied	12%

Regarding the perceived difficulty of the activities, almost all students answered that they were very demanding (86%). The task that required transformation of graphical data into textual was taught to be the most difficult.

Table 2. Perceived Difficulty of the Activities

Very difficult	82%
Difficult	4%
Neutral	2%
Easy	8%
Very easy	4%

Regarding the perceived benefits of the activities, more than three-quarters of students stated that they found implementation of MI in a CLIL course beneficial (78%). Majority of them answered they would like to have more classes with similar activities.

Table 3. Perceived Benefits of the Activities

Not at all beneficial	2%
Not beneficial	8%
Neutral	12%
Beneficial	66%
Very beneficial	12%

CONCLUSION

Students learn more efficiently and are more motivated if individual differences in preferred learning styles are taken into account. Hence, many foreign language teachers have realized the importance of encouraging learners to explore and employ all of their intelligences. Creation of stimulating and varied activities and tasks based on

multiple intelligence strategies can enhance students' motivation and foster class interaction. Also, such activities may help teachers to better appreciate the hidden strengths of their students, whereas students themselves may feel more respected by their classmates and feel better about their progress and achievements.

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