A Mexican Study of Multiple Intelligences for Pre-Service Teachers of English as a Foreign Language

Un estudio de inteligencias múltiples con futuros docentes de inglés como lengua extranjera mexicanos

Rebeca Elena Tapia Carlín
rebetapc@yahoo.com.mx

María del Carmen Castillo Salazar
carmencassal757@hotmail.com

Susana Velázquez Cortés
chikis_svc@hotmail.com
Benemérita Universidad Autónoma de Puebla, Mexico

This article describes a study conducted in a Mexican English teacher education program about multiple intelligences. Seventy-four first year students participated in the study. Findings reveal that the highest kinds of intelligences were the bodily kinesthetic, the interpersonal, the intrapersonal, and the musical; the lowest ones were the naturalist, the existential, the verbal linguistic, the logical mathematical, and the visual spatial. The authors suggest that it is important to diagnose and promote these intelligences in trainees in a systematic way in order to equip them with knowledge and experience of multiple intelligences in order to use them in their future teacher practice.

Key words: Multiple intelligences, teacher education, teaching strategies

Este artículo presenta un estudio realizado en un programa de formación de docentes de inglés en México en torno al tema de inteligencias múltiples. Setenta y cuatro alumnos al inicio de al inicio de su carrera participaron en el estudio. Los resultados muestran que las inteligencias más altas en esta muestra fueron la kinestésica, la interpersonal, la intrapersonal y la musical; las menos desarrolladas fueron la naturalista, la existencial, la verbal lingüística, la lógica matemática y la visual espacial. Los autores sugieren que se diagnostique y promueva el desarrollo de estas inteligencias en los futuros docentes de manera sistemática sistémica, con el objeto de que ellos las puedan emplear como herramienta de enseñanza.

Palabras clave: formación docente, herramientas de enseñanza, inteligencias múltiples

Introduction

The theory of multiple intelligences (MI) refers to a learner-based philosophy that describes human intelligence as having multiple dimensions that can be developed in education (Richards & Rodgers, 2001). This study aims to identify the different types of MI of a group of Mexican pre-service teachers at the beginning of their studies in order to generate a diagnosis that could provide useful information for their professors. We believe that diagnosing learners at the beginning of a course of studies can contribute to identifying their needs; from this point, professors can generate teaching strategies to address learner needs by providing specific treatment and then assessing their progress throughout the process as pointed out by Brown (2001). Furthermore, identifying learners' individual differences can help teachers to guide learners and suggest strategies to succeed (Reyna & Ocampo, 2012).

The theory of MI was conceived in 1983 and was first introduced by Gardner (1983, 1999). Gardner (1983) believed that a person's intelligence should not be measured on terms of an intelligence quotient (IQ) test, the opposite of most psychologists' points of view. To prove this, he used as an example the case of a musician: This man was an excellent and well-known violinist; however, in terms of the IQ test, this man was not "intelligent" enough. For Gardner, the term "intelligence" was equivalent to the ability to solve any kind of problem. Gardner believed that every person could possess as many types of intelligences as there are many ways of interacting with the world. This is exactly where the MI came from.

This article aims to answer the following research question: What multiple intelligences do Mexican pre-service teachers have when beginning their major in English language teaching?

The article is organized as follows: The first part presents definitions of intelligence, MI, the role of MI in an educational context and previous research in different countries; the second describes the study and the third presents the results and the discussion.

Defining Intelligence

Since long time ago, there has been a controversy concerning the definition of the concept *intelligence*. Some authors agree on the fact that this term should be conceived as a general factor (Gottfredson, 1998; Teele, 2000); but other researchers believe that this idea could be better described in terms of separated abilities that together complement each other (Gardner, 1983, 1999; Medina, 2006).

This last idea of intelligence is a different view supported by authors like Francis Galton, Alfred Binet, Jean Piaget and is very distant to the traditional one supported by philosophers like Socrates, Plato, Aristotle, Kant, Hegel, and Descartes. The "old" view states that intelligence is a *natural feature* that intends to choose the best possible recourse in each of its

acts and is not limited only to logic reasoning (Argüello, 2011; Aristotle, trans. 1952). The "new" view proposes that intelligence is a bio-psychological potential that is developed in order to accomplish goals as well as for solving problems. Nevertheless, according to Gardner (1983), it becomes essential to remark that this intelligence is not seen as a whole thing; it is better described as a combination of different competences, and when they are well developed, they get together as part of the same thing, to achieve the same goal. Moreover, Gardner did not disapprove of the belief of the genetic influence; however, he believed that the socio-cultural context plays a very significant role; in other words, experiences and the kind of education given may shape one's intelligence.

The Nine Intelligences

Gardner (1983) describes research and studies about multiple intelligences conducted by him and some colleagues from Harvard University in the project named "Zero". The main purpose for this project was, from the beginning, to assess and research children's learning processes. Over time, this project has expanded its focus of study to include more aspects about education (curricula, schools, educational organizations, etc.).

It was right here that the MI theory was born as a complement of the general and traditional concepts of intelligence. This theory supports the existence of *different abilities* which, when taken together, may help students to achieve successful learning. This means that it is crucial to develop each of these intelligences in order to succeed at any learning. Another relevant point is that each person has a different profile of MI; in other words, everyone has one or more of these types of intelligences more developed than others. Basically, one person can learn better by touching and other person can learn better by watching. Nevertheless, it is very relevant to remark that every person possesses every type of intelligence but in different percentages or amounts.

For Gardner (1983), there are certain criteria that should be followed in order to distinguish between a type of intelligence and merely a talent or ability. Going along with Gardner's proposal, the MI theory started with seven types of intelligences then afterwards an eighth intelligence was added to the list; anyhow, nowadays there are nine types of intelligences as follows:

1. Verbal-linguistic: facility with words and language structure.
2. Logical-mathematical: facility with logic, inductive and deductive reasoning, and numbers.
3. Bodily-kinesthetic: facility with body movement, as in sports and dance.
4. Visual-spatial: facility in the use and manipulation of space, form, color, and shape.

5. Musical: facility in the creation, production, and appreciation of music.

6. Interpersonal: facility in understanding others' emotions, needs, and points of view.

7. Intrapersonal: facility in understanding one's own motivation and emotions.

8. Naturalist: facility in identifying and classifying flora and fauna.

9. Existential: facility to confront deep questions about human existence.

The nine intelligences previously presented are suggested by Altan, 2012; Romero, 2013; and Romero and Joya, 2008; however, some other scholars see multiple intelligences as a group of ten intelligences including the *moral* or *spiritual* (Furnham, Tang, Lester, O'Connor, & Montgomery, 2002; Gardner, 1999).

MI Theory Within Educational Contexts

MI theory relates to a learner-based philosophy that defines human intelligence as possessing multiple dimensions that must be granted and developed through education. Gardner (1999) said that this theory of multiple intelligences does not oppose the idea of the presence of a general intelligence; instead, it emphasizes that there is also an influence of heredity and environment. This is where the context plays an important role as an impact on the MI theory.

Previous Research on MI

For the present study, an exploration of some previous worldwide research about this topic was made. Most of the prior investigations found are related to the field of education; still, a few studies have been found globally. The main findings of these studies are discussed below.

Some studies about MI were found in Asia. In Taiwan, Yi-an (2010) found that the MI theory had, to some extent, a positive influence on foreign language behavior and performance; in Iran, Soleimani, Moinnzadeh, Kassaian, and Ketabi (2012) found that English as a foreign language (EFL) students who were taught based on the MI theory (experimental group) performed better in their general proficiency and in each of their sub-skills than the control group; in Singapore, Dastgoshadeh and Jalilzadeh (2011) stated that they considered the third Millennium as a point in time to implement innovations with a multi perspective view in various areas: multimodalities, multi-identities, multicultural, multilingualism, and therefore multiple intelligences. These scholars suggest that EFL teachers should adopt and adapt different methods to enhance students in the learning process, such as multiple intelligences. In Turkey, MI proved to be an effective method to

teach English. First, Sarikaoglu and Arikan (2009) found that upon applying MI in an EFL context, learning was fostered and this methodology made learners feel more confident; second, Altan (2012) suggests that MI should become part of English language teaching (ELT) programs and this theory ought to be considered as part of the process of ELT teacher education.

In Europe some research using MI was also found. In Spain, Gomis's (2007) findings revealed that teachers' beliefs play an important role in learner success. Gomis also notes that EFL teachers need to consider students' likes in the learning process. M. T. García (2009) claimed that the MI theory should be seen as an innovative method for teaching any topic or subject; also, Arnold and Fonseca (2004) suggest that the MI principles may enhance motivation and can be implemented by designing a balanced class.

In the American continent some research was also found. Regarding the USA, a study where action research was carried out proved that using the MI theory in the second language classroom might unlock the full learning potential of each student, thereby producing a positive impact on both teachers and students (Hall, 2004). In Guatemala, Medina (2006) found that not all students learn in the same way, therefore, there should be as many different ways to teach as there are different ways to learn. In Costa Rica, Serrano (2007) made a comparison among different pedagogical models and, as a result, proposed that the learning pedagogical models in Costa Rican public schools become updated based on the new learning trends, including the MI as a teaching method; furthermore, it was also established that even when a teacher knows each student's type of intelligence, s/he should provide students with attractive didactic material including all types of intelligences (Lizano & Umaña, 2008). In Colombia, Argüello and Collazos (2008) and Martínez and Durán (2005) reported great benefits when students were able to use MI in their classes, regardless of the subject. In Venezuela, Guzmán and Castro (2005) proposed the inclusion of extra courses for pre-service teachers and for in-service teachers about the application of MI in the classroom; furthermore, Suárez, Maiz, and Meza (2010) claim that MI improved the teaching-learning process. In Peru, Barrientos, Mattza, Vildoso, and Sánchez (2009) found that the level of success or achievement is significantly influenced by the learning style; Huerta (2010) also found that every one of the types of intelligence is correlated to specific subjects, and it is in those subjects where some types of intelligences should be developed more than others. In Chile, Rigo and Donolo's (2010) study revealed that in the national university there is a great diversity of multiple intelligences, which lead them to implement the MI as a method for teaching. In Argentina, Castro (2000) found evidence that suggests that students using MI experienced higher academic achievement; and Cardozo, González, and Romano (2010) remarked that it is the teacher who should follow and foster students' learning and that is why teachers should be aware of the MI theory. In Puerto Rico, Padovani (2000) suggests that

there should be an agreement among coordinators, administrators, teachers, parents, and students in order to implement MI theory inside any classroom.

Finally, some of the research done in Mexico is discussed. Four studies focused on MI are presented. The first one was carried out in 2005 in the city of Toluca by researchers from Universidad Autónoma de México. This research was done with participants from a public secondary school. It was found that Mexican education is teacher centered, and this should be changed (G. García, 2005). The second study was conducted in 2007 in the city of Mérida, Yucatán. The focus of this research was the influence of music in the learning process. The participants were students of a private high school. This study revealed that music had a strong and positive impact on the academic achievements of the participants, and it also created a nicer environment inside of the classroom which led students to have a better learning process (Martínez & Lozano, 2007). The third study was done at a public university in the north west of Mexico in a teacher education program. For this study, three instruments were used: first the Beliefs about Language Learning Inventory (BALLI, as proposed by Horwitz), then the MI questionnaire adapted by Romero & Joya (2008), and finally a self-esteem scale of the Minnesota Multiple Personality Inventory (MMPI). This study aimed to explore the relation between students' beliefs on second language learning, self-esteem and a preferred type of intelligence (Romero, Márquez, & Crhova, 2013). The last study that was discussed about MI was conducted at another Mexican public university but this one in central Mexico with EFL pre-service teachers; the results showed that apart from motivation or attitude, the different types of intelligence may determine students' chances for successful academic achievement (Funderburk, Hidalgo, Paredes, & Dzul, 2013). These scholars highlight the importance of generating a plan of action as part of teacher education courses to make the most of the theory of multiple intelligences.

There have been numerous critiques of the theory of multiple intelligences (Allix, 2000). Morgan (1996) claimed that Gardner (1983) did not discover "new intelligences" but "cognitive styles." Cary (2004) argued that although MI theory seems to be democratic, it is simply a positivist quantitative methodology. One of the main critiques made of the MI theory is described by Kincheloe (2004), who asserts that despite its democratic promise, Gardner's theory has not met the expectations of its devotees due to the fact that this theory is unable to comprehend the social, cultural, and political forces that helped shape the reception of MI theory. In spite of this criticism we view this theory as valuable and useful for language teachers to learn to know their learners.

The Study

This article describes a case study. Merriam (2002) defines this type of inquiry as a piece of research that is an analysis of a single entity, a unit around which there are boundaries; in other words a bounded system conducted to better know and understand that entity (Smith, 1978).

As Stake (2005, p. 435) mentions, "a case is a specific, complex, functioning thing." In this study, the *specific unit* is a group of learners from the same generation in an ELT BA program. The following section describes the elements of this case study. The points included in this section are the following: participants, instrument, research questions, and the procedure used to collect and analyze the data in this study.

Participants

Pre-service teachers are those starting a teacher education program at the undergraduate or postgraduate level (Borg, 2006); in this case the participants of this study were studying at the undergraduate level. Seventy-four trainees participated in this study. They were studying for the major in English language teaching at a public university from central Mexico. They were freshmen. Of these 74 participants, 55 were female and 19 were male. Their age range was from 18 to 24 years old.

Instrument

Since this project aimed to identify the most preferred types of intelligence of the students in this ELT program, a questionnaire of multiple intelligences was administered. This questionnaire was the one proposed by Romero and Joya (2008) who adapted it from Lamberty. It was also applied in the studies conducted by Funderburk et al. (2013) and Romero et al. (2013). The English version of this instrument can be seen in the Appendix. As the learners were freshmen and knew little English, we decided to apply this instrument in Spanish.

This questionnaire has nine sections representing each type of intelligence. Each section, of the nine just mentioned, has 10 statements related to the type of intelligence in that section. For each statement students have to write a corresponding number of the scale presented at the beginning: from 2 to 0 (from *positive* to *negative*). Once students have marked every statement with any number (from 2 to 0), at the end of each section there is a space for them to write the sum of the numbers they wrote. Finally, at the end of the instrument (after the nine sections), there is an area for students to write the sum of each section/type of intelligence; consequently, students have a better vision of the results they have got in each of the previous sections. In this instrument, participants were asked to make associations between the questions of the specific type of intelligences and what they actually do to perform learning tasks or to identify their perceived strengths (see Appendix).

Procedure of Data Collection and Analysis

The freshmen that participated in the study were given the MI questionnaire. The instrument was applied to different intact groups with the permission of their teachers. It

took them about ten to fifteen minutes to answer it. The questionnaires were collected and the answers were analyzed.

Results and Discussion

In order to answer the research question the responses of the participants were analyzed. It was found that these Mexican pre-service English teachers have various intelligences. The results of the questionnaire are presented in Table 1.

Table 1. Preference of MI Among Participants

Type of Intelligence	Preference %
Bodily-kinesthetic	33.77
Interpersonal	31.07
Intrapersonal	22.96
Musical	21.61
Visual-spatial	9.45
Logical-mathematical	8.10
Verbal-linguistic	6.75
Existential	4.05
Naturalist	1.35

Table 1 shows the most frequent types of intelligence among the participants. The highest score was the *bodily-kinesthetic* (33.77%), the second most liked was the *interpersonal* (31.07%), the third one was the *intrapersonal* (22.96%), the fourth one was the *musical* (21.62%), the fifth one was the *visual-spatial* (9.45%), the sixth one was the *logical-mathematical* (8.10%), the seventh one was the *verbal-linguistic* (6.75%), the eighth one was the *existential* (4.05%), and finally the ninth one was the *naturalist* (1.35%). Now these results are discussed.

The highest score was obtained for the *bodily kinesthetic intelligence* (33.77%). This means that one third of the participants can use their body in skilled ways. We believe that this

information may be useful for their teacher educators who could design learning activities in the language classroom where students move at the same time they are learning English. Even though they are not young learners of English, some of them may be teachers of children when they graduate, so they can also learn how to implement dynamic activities that will generate meaningful learning.

The second most important was the *interpersonal* intelligence (31.07%). This means that one third of the participants are social learners who are able to notice differences among individuals. This type of intelligence is frequent among leaders, parents, and teachers (Gardner, 1983). We believe that this result is positive and should be maintained by teacher educators who could design activities that promote teamwork and interaction among learners.

The third most important intelligence was the *intrapersonal* (22.96%). This means that some of the participants think they are capable of understanding themselves. We consider this also as a positive result due to the fact that this type of intelligence is related to identity. Identity refers to who we are and how we relate to others (Woodward, 1997).

The fourth intelligence was the *musical* intelligence (21.62%). This means that some participants are able to identify rhythm and musical patterns. This is a very useful intelligence when learning languages.

The fifth most important intelligence was the *visual-spatial* (9.45%). This is related to our ability to see. This means that very few participants can perceive shapes and colors; this intelligence may facilitate their understanding of how the English language uses time and space, which is often difficult to understand by non-native speakers (Funderburk et al., 2013).

The sixth intelligence in order of importance was the *logical-mathematical* (8.10%). This allows subjects to develop scientific thinking. As participants were beginning to take university courses, most of them were not familiar with scientific thinking.

The seventh most important intelligence was the *verbal-linguistic* (6.75%). This was an unexpected result; however, it may be considered an area that needs to be developed, especially for one with a major in English language teaching.

The eighth intelligence for this group of trainees was the *existential* (4.05%). This refers to the ability of the participants to pose questions about life.

The ninth intelligence, that is the least important intelligence for this group of pre-service teachers, was the *naturalist* (1.35%). It seems that most participants were not familiar with the organizational patterns of nature, and they seem to value nature very little. As citizens of the XXI century we believe that this intelligence must be developed since kindergarten so when subjects reach college level, they can answer their doubts.

So, the results show that the highest intelligences were the bodily kinesthetic, the interpersonal, the intrapersonal, and the musical; the lowest ones were the naturalist, the existential, the verbal-linguistic, the logical-mathematical, and the visual-spatial. These results are similar to the ones obtained by Funderburk et al. (2013) and even though Funderburk et al.'s percentages are higher, the order of importance of the multiple intelligences is mainly the same for both groups. The only difference between this study and the one conducted by Funderburk et al. is the fact that the musical intelligence is the third most important type of intelligence found.

According to the MI theory, a type of intelligence is one's capacity/talent/ability that is more developed than another. Results display as well that among the 74 participants there was the presence of the nine types of intelligences, which means that great attention should be paid to all types of intelligence because all of them have the potential to appear in any group of students.

We think that language teachers should possess a great capacity to communicate, that is, they should have a high score on the verbal-linguistic intelligence, and this was one of the lowest intelligences found in the participants. The other intelligences that were low (naturalist, existential, logical-mathematical, and visual-spatial) should also be promoted in order to equip learners with the knowledge and experience to make these intelligences potential teaching strategies for the trainees. Based in our own experience we can say that many target language classes in this program are grammar-centered. Therefore, we think that they methodology used to teach these courses should be modified taking into account that students have different learning styles and multiple intelligences. Consequently, pre-service teachers may recognize the importance of the role of MI in the EFL learning process.

Conclusions

This case study allowed the researchers to answer the research question posed at the beginning of this article: What MI do Mexican pre-service teachers have at the beginning of their major in English language teaching? Data revealed that Mexican pre-service teachers have the nine multiple intelligences but in different degrees. First, the *bodily-kinesthetic* (33.77%), second the *interpersonal* (31.07%), third the *intrapersonal* (22.96%), fourth the *musical* (21.62%), fifth the *visual-spatial* (9.45%), sixth the *logical-mathematical* (8.10%), seventh the *verbal-linguistic* (6.75%), eighth the *existential* (4.05%) and ninth the *naturalist* (1.35%). Thus, findings reveal that the highest intelligences were the bodily kinesthetic, the interpersonal, the intrapersonal and the musical; the lowest ones were the naturalist, the existential, the verbal-linguistic, the logical mathematical, and the visual-spatial. This information should be given to all the teacher educators that are going to teach these learners. In this way, these teachers can help trainees to maintain and raise the intelligences on which they scored higher

and implement activities that will allow learners to develop the ones on which they scored low, especially the verbal-linguistic due to the fact that participants were pre-service teachers.

Educational Implications of MI Theory in Language Teacher Education Programs

Once the benefits of applying the MI theory on a second-language learning process have been established, it is time to set what can and should be done in this area, to make the learning process easier and more effective. In order to make EFL teachers aware of the importance of implementing the MI in the lesson plans, starting teacher educators should first be encouraged to include their theory in their programs (Altan, 2012). It becomes very relevant to show future EFL teachers the importance of this theory; this is why teacher educators should exemplify how to innovate a class by utilizing MI theory.

EFL teachers should conceive the MI as a means for building activities for one day, for a week and even to accomplish purposes throughout the year. It is like having nine elements to make a class more interesting, and in some cases, even funnier to everyone. At first, the topic needs to be selected and then the different types of intelligences will become visible to be implemented, they will be found in the environment surrounding the class.

The learning styles or the most preferred types of intelligences found in a group of learners must match the teaching style. In other words, through the integration of multiple intelligences into the teaching strategies, EFL teachers can adopt multiple methods to assist students in enhancing cognitive, social, and emotional abilities. Those abilities are part of the learning of a foreign language; therefore, teacher educators ought to pay attention to this special part of engaging MI with those cognitive, social, and emotional abilities. In sum, the theory of MI can be a useful tool for FL teacher educators and language teachers to improve the quality of the language teaching/learning process.

Thus, we suggest that language teachers should provide students a balanced class; this means that teacher's lesson plan should include a variety of activities that can foster various types of intelligences as they see that intelligence is not a single unique feature, but a collection of intelligences that can be developed through education. Taking the learner as the main character of this teaching-learning process, the use of MI in the activities within the classroom may help teachers to motivate and integrate students; furthermore, this may also help learners to acquire their own knowledge, to have a positive attitude towards the language which may lead them to have better behavior in class and to have a better relationship with their classmates (Suárez et al., 2010). Moreover, it is very important that pre-service and in-service teachers should be engaged every day in activities that allow them to develop the different types of intelligences due to the fact that each of those nine intelligences are likely to appear in every learner.

In addition, to make all this possible there is a first step that may be really essential: to diagnose the learners' types of intelligences. In order to accomplish that, teachers should administer a questionnaire of multiple intelligences at the beginning of any course. By doing so, teachers can be aware of the types of intelligences of their students and plan the language lessons accordingly. This will generate a nice environment inside the classroom and a more positive attitude of students towards the subject (Armstrong, 2009).

Even though some research has been done, further research needs to be conducted in different countries to compare the findings of this study. This can help language teachers to better understand their students and become more effective teachers.

Although MI is a theory that has been criticized (Allix, 2000; Kincheloe, 2004), we believe that it can still provide useful information to help teacher educators know their students at the beginning of their BA program and design activities that both reinforce and help them learn in different ways (Funderburk et al., 2013).

References

Allix, N. M. (2000). The theory of multiple intelligences: A case of missing cognitive matter. *Australian Journal of Education*, *44*(3), 272-288.

Altan, M. Z. (2012). Introducing the theory of multiple intelligences into English language teaching programs. *Pamukkale University Journal of Education*, *32*, 57-64.

Argüello, S. (2011). Overcoming an anaxagorian concept of Nôus by a metaphysical theory of the best possible: From Socrates to Aquinas. *Apuntes Filosóficos*, *20*(38), 127-132.

Argüello, V. J., & Collazos, L. A. (2008). *Las inteligencias múltiples en el aula de clases* [Multiple intelligences in the classroom] (Undergraduate thesis). Universidad Tecnológica de Pereira, Colombia. Retrieved from http://hdl.handle.net/11059/1402

Aristotle (trans. 1952). Politics. Chicago, IL: Great Books of the Western World.

Armstrong, T. (2009). *Multiple intelligences in the classroom* (3rd ed.). Alexandria, VA: ASCD Publications.

Arnold, J., & Fonseca, M. C. (2004). Multiple intelligences theory and foreign language learning: A brain-based perspective. *International Journal of English Studies*, *4*(1), 119-136.

Barrientos, E., Mattza, I., Vildoso, J., & Sánchez, T. C. (2009). Las inteligencias múltiples, los estilos de aprendizaje y el nivel de rendimiento [Multiple intelligences, learning styles, and accomplishment level]. *Investigación Educativa*, *13*(23), 9-19.

Borg, S. (2006). *Teacher cognition and language education: Research and practice.* London, UK: Continuum.

Brown, H. D. (2001). English language teaching in the "post method" era: Toward better diagnosis, treatment, and assessment. In J. C. Richards & W. A. Renandya (Eds.), *Methodology in language teaching: An anthology of current practice* (pp. 9-18). Cambridge, UK: Cambridge University Press.

Cardozo, R. A., González, G., & Romano, E. (2010). Motivación e inteligencias múltiples: el rol del docente [Motivation and multiple intelligences: The teacher's role]. *Revista Electrónica de Psicología Política*, *8*(23), 128-140.

Cary, R. (2004). Howard Gardner's theory of visual-spatial intelligence: A critical retheorizing. In J. L. Kincheloe (Ed.), *Multiple intelligences reconsidered* (pp. 84-118). New York, NY: Peter Lang Publishing.

Castro, A. (2000). Las inteligencias múltiples en la escuela [Multiple intelligences in the school]. *Psicodebate: Psicología, Cultura y Sociedad*, *2*, 23-40.

Dastgoshadeh, A., & Jalilzadeh, K. (2011). Multiple intelligences-based language curriculum for the third millennium. *International Proceedings of Economics Development & Research*, *18*, 57-62.

Funderburk, R., Hidalgo, H., Paredes, B., & Dzul, M. (2013). A tri-dimensional study of pre-service teachers of English: Beliefs, language, and multiple intelligences. In R. E. Tapia, H. Hidalgo, & M. G. Méndez. (Eds.), *Looking into learner needs in Mexican ELTed: PIAFET Project Vol. 1* (pp. 113-142). Puebla, MX: Benemérita Universidad Autónoma de Puebla.

Furnham, A., Tang, L. P., Lester, D., O'Connor, R., & Montgomery, R. (2002). Estimates of ten multiple intelligences: Sex and national differences in the perception of oneself and famous people. *European Psychologist*, *7*(4), 245-255.

García, G. (2005). Las inteligencias múltiples en la escuela secundaria: el caso de una institución pública del Estado de México [Multiple intelligences in high-school: The case of one public institution in the state of Mexico]. *Tiempo de Educar*, *6*(12), 289-315.

García, M. T. (2009). La dimensión comunicativa de las inteligencias múltiples [The communicative dimension of multiple intelligences]. *Cuadernos de Información y Comunicación*, *14*, 141-157.

Gardner, H. (1983). *Frames of mind: The theory of multiple intelligences*. New York, NY: Basic Books.

Gardner, H. (1999). *Intelligence reframed*. New York, NY: Basic Books.

Gomis, N. (2007). *Evaluación de las inteligencias múltiples en el contexto educativo a través de expertos, maestros y padres* [Evaluation of multiple intelligences in the educational context through experts, teachers, and parents] (Doctoral dissertation). Universidad de Alicante, Spain.

Gottfredson, L. S. (1998). The general intelligence factor. *Scientific American*, *9*, 24-29.

Guzmán, B., & Castro, S. (2005). Las inteligencias múltiples en el aula de clases [Multipe intelligences in the classroom]. *Revista de Investigación*, *58*, 177-202.

Hall, M. H. (2004). Learner-centered instruction and the theory of multiple intelligences with second language learners. *Teachers College Record*, *106*(1), 163-180.

Huerta, R. T. (2010). *Las inteligencias múltiples y el aprendizaje de las diversas áreas curriculares en los estudiantes del 4° y 5° ciclo de primaria del Colegio Experimental "Víctor Raúl Oyola Romero" de la Universidad Nacional de Educación*. Perú: Universidad Nacional de Educación.

Kincheloe, J. L. (2004). Twenty first century questions about MI. In J. L. Kincheloe (Ed.), *Multiple intelligences reconsidered* (pp. 3-28). New York, NY: Peter Lang Publishing.

Lizano, K., & Umaña, M. (2008). La teoría de las inteligencias múltiples en la práctica docente en educación preescolar [Multiple intelligences theory in the teaching practice in pre-school education]. *Revista Educare*, *12*(1), 135-149.

Martínez, A., & Durán, O. (2005). Juan Gossaín según Howard Gardner (aunque ambos lo ignoren) [Juan Gossaín according to Howard Gardner (though both ignore it)]. *Investigación y Desarrollo*, *13*(2), 390-411.

Martínez, L., & Lozano, A. (2007). La influencia de la música en el aprendizaje [The influence of music in learning]. *Memorias del IX Congreso Nacional de Investigación Educativa*, Mérida, México.

Medina, E. A. (2006). *Importancia del desarrollo de las inteligencias múltiples en las áreas de verbal lingüística y relaciones interpersonales en maestros* [Importance of the development of multiple intelligences in teachers in the verbal-linguistic and interpersonal areas] (Unpublished undergraduate thesis). Universidad de San Carlos de Guatemala.

Merriam, S. B. (2002). Case study. In S. B. Merriam, and Associates (Eds.), *Qualitative research in practice: Examples for discussion and analysis* (pp. 178-180). San Francisco, CA: Jossey Bass.

Morgan, H. (1996). An analysis of Gardner's theory of multiple intelligences. *Roeper Review*, *18*(4), 263-269.

Padovani, J. (2000). *Las inteligencias múltiples: implicaciones para maestros y estudiantes* [Multiple intelligences: Implications for teachers and students]. Retrieved from http:// aprendeenlinea.udea.edu.co/ lms/moodle/file.php/85/tema4/Implicaciones_de_las_IM.pdf

Reyna, S. F., & Ocampo, D. M. (2012). Estrategias de aprendizaje y su relación con el aprovechamiento en el aprendizaje del idioma inglés [Learning strategies and their relation to enhancing English learning]. In D. M. Ocampo (Coord.) *Investigaciones en la enseñanza del idioma inglés: Evidencias empíricas* (pp. 11-29). México, MX: Fénix.

Richards, J. C., & Rodgers, T. S. (2001). *Approaches and methods in language teaching* (2nd ed.). Cambridge, UK: Cambridge University Press.

Rigo, D. Y., & Donolo, D. (2010). Una medida de las inteligencias múltiples en contextos universitarios [Assessment of multiple intelligences in college contexts]. *Revista Electrónica de Desarrollo de Competencias (REDEC)*, *2*(6), 23-33.

Romero, B. A. (2013). Percepción del centro de autoacceso por los estudiantes de un segundo idioma [Second language students' perceptions of the self-access center]. *Leaa Revista Electrónica*, *3*(2). Retrieved from http://cad.cele.unam.mx/leaa/cnt/ano03/num02/ 0302a01.pdf

Romero, B. A., & Joya, L. (2008). *Instrumento para medir las inteligencias múltiples* [Instrument to measure multiple intellingences]. Universidad Autónoma de Baja California, México.

Romero, B. A., Márquez, C., & Crhova, J. (2013). Multiple intelligences: Students' beliefs on language learning (BALLI) and self-esteem. In R. E. Tapia, H. Hidalgo, & M. G. Méndez (Eds.), *Looking into learner needs in Mexican ELTed: PIAFET Project Vol. 1* (pp. 79-102). Puebla, MX: Benemérita Universidad Autónoma de Puebla.

Sarikaoglu, A., & Arikan, A. (2009). A study of multiple intelligences, foreign language success, and some selected variables. *Journal of Theory and Practice in Education*, *5*, 110-122.

Serrano, A. (2007). Comparación de las inteligencias múltiples en niños(as) que pertenecen a escuelas con distintos modelos pedagógicos [Comparison of multiple intelligences in children from schools with different pedagogical models]. *MH Salud*, *4*(1), 1-11.

Smith, L. M. (1978). An evolving logic of participant observation, educational ethnography, and other case studies. *Review of research in education*, *6*(1), 316-377.

Soleimani, H., Moinnzadeh, A., Kassaian, Z., & Ketabi, S. (2012). The effect of instruction based on multiple intelligences theory on the attitude and learning of general English. *English Language Teaching*, *5*(9), 45-53.

Stake, R. E. (2005). Qualitative case studies. In N. K. Denzin & Y. S. Lincoln (Eds.), *The Sage handbook of qualitative research* (3rd ed., pp. 433-466). Thousand Oaks, CA: Sage.

Suárez, J., Maiz, F., & Meza, M. (2010). Inteligencias múltiples: una innovación pedagógica para potenciar el proceso enseñanza aprendizaje. *Universidad Pedagógica Experimental Libertador: Investigación y Postgrado*, *25*(1), 81-94.

Teele, S. (2000). *Rainbows of intelligence: Exploring how students learn*. Thousand Oaks, CA: Corwin Press.

Woodward, K. (1997). Introduction. In K. Woodward (Ed.), *Identity and difference* (pp. 1-6). London, UK: Sage.

Yi-an, H. (2010). Multiple intelligences and foreign language learning: A case study in Taiwan. *International Journal of Humanities*, *58*, 1-30.

The Authors

Rebeca Elena Tapia Carlín holds a doctorate in Applied Linguistics from the University of Macquarie, Australia. She is an experienced teacher educator and researcher at Benemérita Universidad Autónoma de Puebla (Mexico). Her research interests are teacher education and professional development.

María del Carmen Castillo Salazar holds a doctorate in Pedagogical Sciences from the University of Camagüey, Cuba. She is an experienced teacher educator and researcher at Benemérita Universidad Autónoma de Puebla (Mexico). Her research interests are teacher education and learning strategies.

Susana Velázquez Cortés is a pre-service teacher who is finishing her major in English Language Teaching at the Faculty of Languages of Benemérita Universidad Autónoma de Puebla (Mexico). Her research interests are teacher education and language learning.

Appendix: Multiple Intelligences Questionnaire

What is your learning style? Read fast every statement. Choose which one is true for you:

2 = Quite true, **1** = More or less true, **0** = Not true at all.

Name:_____ Date: _____ Age: _____

Verbal- Linguistic:

_____ **A.** I like word games such as "100 Mexican said."

_____ **B.** I am good at writing letters.

_____ **C.** If I listen to a song, I remember its lyrics.

_____ **D.** When travelling by bus or taxi, I read information on billboards and signs.

_____ **E.** I learn more by listening to the radio or to a lecture than watching movies or reading.

_____ **F.** My favorite subjects at school are language arts and history, not chemistry or mathematics.

_____ **G.** I like reading different texts including books and magazines.

_____ **H.** When I write a composition I usually write more than my classmates.

_____ **I.** I have been told that I am good at writing.

_____ **J.** I like to tell stories and jokes.

TOTAL _____

Logical-Mathematical:

_____ **A.** I like to try out things by doing experiments.

_____ **B.** I like math class at school.

_____ **C.** I always look for logic and patterns in my activities.

_____ **D.** I can solve problems with numbers without using a calculator.

_____ **E.** I like things that have been measured, analyzed, and categorized.

_____ **F.** I like to measure, plan, and project supplies before doing anything.

_____ **G.** I like to learn and/or understand how things and machines work.

_____ **H.** I like to play chess, cards, and other strategy games.

_____ **I.** I am curious and often ask the question: Why?

_____ **J.** I like to read about scientific discoveries.

TOTAL_____

Bodily-Kinesthetic:

_____ **A.** I like acting, making gestures, and miming.

_____ **B.** I practice at least one sport.

_____ **C.** I need to stand up and move. I do not like to be seated for long periods of time.

_____ **D.** When I speak I always move my hands even when I make phone calls.

_____ **E.** I like to learn by doing or creating something.

_____ **F.** I like camping, travelling by boat, and bike riding.

_____ **G.** When I go shopping I touch and pick up things that catch my attention.

_____ **H.** I think that my physical coordination is good.

_____ **I.** I like dancing.

_____ **J.** I like to learn more by doing than by reading or listening to an explanation.

TOTAL:_____

Visual-Spatial:

_____ **A.** I enjoy solving crossword puzzles, other puzzles, and finding hidden objects.

_____ **B.** I prefer to see a map than to listen to someone explaining how to find a place.

_____ **C.** I like geometry more than algebra at school.

_____ **D**. I like books with photographs, tables, and other illustrations.

_____ **E.** I easily remember the details of a thing I see.

_____ **F.** I always pay attention and observe the color of people's clothes.

_____ **G.** I always pay attention and observe the architecture of buildings.

_____ **H.** I enjoy making tables and graphic organizers.

_____ **I.** I always carry my camera when travelling or attending special events.

_____ **J.** I like to do drawings and sketches.

TOTAL:_____

Musical:

_____ **A.** Music is an important part of my life.

_____ **B.** I always sing in the shower.

_____ **C.** When I study or work I whisper songs or make noise with my fingers.

_____ **D.** People tell me I sing well.

_____ **E.** I know different tunes.

_____ **F.** I can easily clap following the rhythm of a song.

_____ **G.** I can play at least one musical instrument.

_____ **H.** I can notice when a musician or a singer is out of tune.

_____ **I.** Music helps me to write and study.

_____ **J.** When I turn off the radio or TV, I still listen to the music of the commercials.

TOTAL:_____

Interpersonal:

_____ **A.** I like studying and working on teams.

_____ **B.** I like social activities and being in clubs.

_____ **C.** When I have a problem I talk to others before acting.

_____ **D.** I am very sensitive to other people's feelings and moods.

_____ **E.** I prefer to attend parties and social activities than being alone on the weekend.

_____ **F.** It is very important for me to make and have friends.

_____ **G.** People tell me I am a good leader.

_____ **H.** I think that I know how to be part of a team.

_____ **I.** I am good at explaining and teaching things to other people.

_____ **J.** If two friends have fought, I try to make them talk and stop fighting.

TOTAL:_____

Intrapersonal:

_____ **A.** I keep a diary where I write down my thoughts and feelings.

_____ **B.** I like to work independently and at my own pace.

_____ **C.** I often think about my dreams and memories.

_____ **D.** When I have to do a project I like to think it through.

_____ **E.** After somebody hurts my feelings I can recover fast.

_____ **F.** I like to have enough time to reflect.

_____ **G.** I consider myself a person with self-discipline.

_____ **H.** I think I can understand myself even though others cannot.

_____ **I.** I can identify the values that my lifestyle is based on.

_____ **J.** I have different opinions and beliefs and other people see them as confusing.

TOTAL_____

Naturalist:

_____ **A.** I like outdoor activities like hiking and camping.

_____ **B.** I am good at growing flowers and plants.

_____ **C.** I like books and movies about nature.

_____ **D.** I like to collect stones, leaves, seashells, or feathers.

_____ **E.** I recognize the shape and color of objects I see, hear, and feel.

_____ **F.** My favorite subject at school is science.

_____ **G.** I like to take pictures and do drawings of nature.

_____ **H.** I pay a lot of attention to details even in small things.

_____ **I.** I am good at classifying, categorizing, selecting, or analyzing information.

_____ **J.** I like to use binoculars, microscopes, or telescopes to study.

TOTAL:_____

Existential:

_____ **A.** I compare myself with the infiniteness of the universe at times.

_____ **B.** I believe that we have not taken care of the world we live in.

_____ **C.** I recognize that the holocaust is part of human nature.

_____ **D.** I have felt a deep love at least once in my life.

_____ **E.** Once I got lost in time when observing a piece of art.

_____ **F.** I like to participate in environmental campaigns.

_____ **G.** I always look for the way and space to reflect and meditate.

_____ **H.** I attend book exhibits and art presentations.

_____ **I.** I often watch *holocaust* movies.

_____ **J.** I am used to reading about morals and philosophy.

TOTAL:_____

TOTAL:

Verbal-Linguistic _____   Visual-Spatial _____   Intrapersonal____

Logical-Mathematical _____   Musical _____   Naturalist____

Bodily-Kinesthetic _____   Interpersonal _____   Existential____

Your learning style is the one with the **highest score**. You can have two or more preferred learning styles. However, Howard Gardner advises people to develop all intelligence types.

Thank you.

(Adapted from Lamberti by Romero & Joya, 2008)