



Analysis of multiple intelligences and professional competences in the school guidance of adolescents

Mariana Floricica Călin¹, Elena Stambuli²

¹Ovidius University of Constanta, Faculty of Psychology and Educational Sciences

Abstract: The analysis of multiple intelligences and professional competencies in the school guidance of adolescents is a vast and complex subject. This study addresses how various forms of intelligence, as defined by Gardner's theory of multiple intelligences, influence the development of professional competencies and the educational guidance of adolescents. The research examines how different types of intelligence - linguistic, logical-mathematical, spatial, musical, kinesthetic, interpersonal, intrapersonal, and naturalist - contribute to the formation of competencies necessary for professional success. The study highlights the importance of a personalized education system that recognizes and values the diversity of adolescents' intelligences and competencies. It also discusses ways in which school guidance can be adapted to support each adolescent in exploring and developing their unique abilities and interests, thereby contributing to their preparation for a satisfying and aptitude-aligned career. The findings of this study offer significant insights for educators, school counselors, and education policymakers, underscoring the need to integrate the theory of multiple intelligences into school guidance strategies.

Keywords: multiple intelligence, competence, school orientation, adolescents

²School counselor teacher, County Center for Educational Resources and Assistance, Constanța



Motto: "Just as you can kill a man in the literal sense, you can kill him figuratively, cutting off his wings and making it impossible for him to rise to the heights. Human common sense has always seen this, and that is why people were found to help the hatching of special spirits, when their paths crossed. A Kant enjoyed this happy fate, and like him many others. But how many have not been left without any support, or because of a wrong education have started on improper paths?" (Narly, 1938)

Theoretical aspects

1. Traditional intelligence and multiple intelligence. Conceptual boundaries

The principle of diversity and uniqueness is specific to human nature, in that we think, act, feel and understand differently, each in its own subjective and unique way.

Respecting individual differences is a principle that should not be missing from the didactic activity, it is a very important principle that helps students understand and act according to their personal abilities, develops their skills and facilitates their path to a profession that be congruent with what they like, with their interests.

Howard Gardner's theory of multiple intelligences, although a controversial theory, represents the theoretical foundation of differentiation in modern education. The application of this theory definitely meets the requirements for active and creative learning of students, helps them to be more involved in the educational act and gives them the opportunity to be motivated to learn how to approach certain situations and problems in an original way. For modern teachers, discovering all the types of intelligence a student has and harnessing it to its fullest potential is a challenge. Harnessing all types of intelligence and combining them helps the student discover novel solutions to problems and can condition academic progress and success. A student who discovers all types of intelligence in congruence with the interests he has, can outline a professional path and he can decide more easily in choosing a career.

When we talk about the development of the child's intelligence, we have in mind the fact that it successively goes through several stages: sensory-motor (from birth to the emergence of language, 15-18 months), pre-operative (from the emergence of language to 7-8 years), of concrete operations (from 7-8 years to 10-11 years), of formal operations (from 10-11 years to 15-16 years). In the stage of formal operations, thinking becomes suitable for hypothetical-deductive reasoning and scientific experiments. The theory of multiple intelligences brought a new perspective in psychology, published for the first time in 1983, in the work "Perspectives of the mind: The theory of multiple intelligences", by Horward Gardner, a professor at the Faculty of Medicine in Massachusetts, USA. The meaning of this theory refers to the fact that people have different ways of relating and reacting to the environment. In this way one can go beyond the concept of traditional intelligence governed by the laws of logic and mathematics.

For Gardner, intelligence means the human ability to solve problems in life, and to create products that are valued in one or more cultural contexts. Later, Gardner returned to the concept and stated that human intelligence is a bio-psychological potential that processes information and is activated to solve the problem or create meaningful products for at least one culture (Gardner, 1983).

The theory of multiple intelligences supports the idea that each person has several types of intelligence, namely:

- verbal-linguistics; logico-mathematics;



- musical-rhythmic; body-kinesthetic;
- visual-spatial; intra and interpersonal;
- naturalist.
- 1) Verbal-linguistic intelligence refers to the manner in which words are used, orally or written. A student with this type of intelligence will read, write, tell stories with pleasure, with ease (Armstrong, 2000).
- 2) Logical-mathematical intelligence represents the ability to work with a logical chain of judgments, to be able to solve problems from the abstract sphere.

Logical-mathematical intelligence also includes the dexterity to formulate some hypotheses, to make classifications, to anticipate or establish certain priorities, etc.

- 3) Visual/spatial intelligence this type of intelligence refers to the ability to correctly understand, from a visual point of view, the surrounding environment, but also the ability to recreate some own experiences, and it develops at the same time as the acceleration of perceptions from sensory-motor sphere.
- 4) Bodily/kinesthetic intelligence this allows those who possess it to easily control and interpret body movements, handle objects and achieve body-spirit coordination.
- 5) Musical/rhythmic intelligence refers to the level of sensitivity a person has to hearing a sound and the insight to respond emotionally to these stimuli.
- 6) Interpersonal intelligence represents the ability to observe and quickly evaluate the states, intentions, motivations and feelings of those around.
- 7) Intrapersonal intelligence this intelligence is the insight of everyone to understand their inner states, to be aware of their desires, intentions, motivations, to know themselves well and their temperament, to self-evaluate and self-discipline. (Armstrong, 2000).
- 8) Naturalistic intelligence this can be observed in those children who learn very easily from nature, in a non-formal way.

2. Multiple intelligences in education

The application of the theory of multiple intelligences in school units is possible if innovative, but also interactive strategies and methods are used through which teaching, learning and evaluation can be done. These can be represented by various portfolios, concept maps, projects, case studies or interviews. In order to achieve school objectives, it is very important for the teacher to adapt his teaching style to the students' learning style, so as to allow the students to develop their abilities, improve their weaknesses and perfect their strengths. In this way, students will be able to achieve the best results.

To help students develop to their full potential, it is important for teachers to know their intelligence profile.

Identifying the skills and competencies of each student is important for teachers because in this way, they can structure their teaching material according to the students' abilities and level of intellect. Thus every teacher should go through the following steps:

- to identify what type of intelligence each student has, what abilities he/she possesses;
- to familiarize students with the theory of multiple intelligences;
- to help students become aware of the combinations of multiple intelligences;
- to motivate the students in order to develop these multiple intelligences;



- to provide students with an adequate framework so that they can demonstrate their multiple intelligences.

3. School and professional orientation of adolescents

School and professional guidance is an activity that has well-established bases on a system of principles, methods and procedures that help teenagers choose a correct, appropriate professional path, congruent with their inclinations, skills, interests. From another point of view, it should also take into account what could be demanded on the labor market and the changes that have occurred in the occupational sphere. Through the activity of school and professional orientation, it is aimed that each individual identifies a suitable occupation (Butnaru, 1999).

In the work "Career Counseling" (2001), Mihai Jigău elaborates several principles that guide vocational counseling. These principles are:

- 1. Counseling must be seen as a dynamic, educational and continuous process;
- 2. Counseling must be carried out taking into account the student's interests, abilities, aptitudes and motivations;
- 3. Counseling must offer the student the possibility of professional and personal affirmation, give him satisfaction and be challenging for him;
- 4. Guidance counseling should ensure a congruence between what the student manages to do, what he wants and what options he has;
- 5. Vocational counseling must provide students with information regarding the socioeconomic situation at all levels (national, regional, local), as well as information regarding the likely demand on the labor market.
 - I. Drăgan found that school and professional guidance fulfills certain functions. These are:
- 1) the investigative function with its help, important data is obtained that refer to the personality of individuals, to the demands of society, to the expectations of students from various professions and careers;
- 2) the informative function through this function, the students will be informed, they will find out details about the demands and requirements of the educational units and the structure of their personality within the educational process;
- 3) formative or educational function this supports the realization of actions with an educational purpose that help students to train and develop some skills, capacities, interests. All this will contribute in a real way to the correct and adequate, suitable formulation of the professional options;
- 4) the integrative function it can be considered basic because it refers to the integration of the beneficiaries from a social and professional point of view (Drăgan, 1999).

4. The role and importance of school guidance

School orientation involves training, developing students' abilities, applying theoretical knowledge in different situations and contexts of society. Teachers, students and parents are involved in this process and it represents an educational, organized and methodical activity. The basis of professional training is laid already in school, starting with the 8th grade, with the choice of the high school profile. During high school, students begin to make future plans, to gather information about the field they choose to continue their studies. In this sense, an important role is played by the school counselor who is a guide and mentor in choosing a professional career, along



with the principals and the family. In general, students consider several internal and external factors that can affect their success when making a professional choice.

The activities that are carried out in the school to guide the students, if they are done without the participation of the parents or without taking into account their opinion, will not have a positive value, but, rather, one with limits. This happens because family members and extended family are a landmark with great impact and importance in shaping an option. Parents are the main and most important source of learning for children, they should provide them with emotional support and security. As children move to a higher level of education, they will take less into account the wishes of their parents regarding the school to follow and the future profession. In general, the criteria that parents have in mind when influencing their children's school and professional choice refer to: the safety and future of the profession on the labor market, the duration of studies to achieve such an objective, financial costs, what position in society the profession offers them, what risks may occur in the exercise of the profession, etc. Academic and professional orientation is closely related to interests. When the student is interested in a particular subject of study or in a certain type of activity, he works with great pleasure, with a good yield and with great skill and precision.

However, interest alone is not enough to ensure success in work; it must also be supported by certain personality traits that must be cultivated in school, in the family (will, determination, scientific curiosity, perseverance). It is not enough to take into account only the student's interests, but also his aptitudes and inclinations. While aptitude is an attribute that conditions success, inclination is an orientation of the personality towards a certain activity. Orientation towards a certain career is based on different reasons, a profession can bring the feeling of power, a good material situation, but before achieving them, various obstacles must be overcome in which interest and decision play an important role. In addition to these, the attitude, which is acquired through learning and experience, the human needs whose satisfaction leads to performance, the stimulation, because it sets the person in motion towards the achievement of goals and the competence which is obtained through achievements, must also be taken into account.

5. Practical research and methodology

School and professional guidance activities take place from the first years of education and should have a permanent course, which can be defined by the staged clarification of the option of continuing studies. Thus, students decide which path to follow after completing the gymnasium cycle or the high school cycle or after the licensure exam of higher studies. Of course, changes can occur even when the school and/or professional option seems to be definitive. (Pitariu, 1983)

Training, in any field, takes place from the first years of school. This begins with the correct choice of the profile and the high school specialty that the graduates of the eight classes must make. Achieving notable performances or successfully exercising a profession requires students to have more motivation with a supporting and energizing role, as well as a set of specific skills and an appropriate type of intelligence. It is certain that, over time, based on the development and experience of the cognitive-intellectual skills, the interests differ. Questionnaires of general or specific interests are helpful in making an appropriate decision regarding the continuation of studies and the choice of a professional career, and in association with a test on skills, intellectual abilities, they lead to a correct and appropriate professional choice that connects the two variables.



We conducted a study to analyze the interests of 8th grade students and what type of intelligence they have depending on their gender.

To carry out the study, I chose a sample consisting of 47 subjects, girls and boys, students of Secondary School No. 8 in Constanța. The students are in 8th grade B and 8th grade C and are between 14 and 15 years old.

The tools we used in the development of this study are:

a). Inventory of Professional Interests (I.I.P.) (Holland, 1966) - this inventory was invented and developed by the American psychologist John L. Holland. It refers to a taxonomy of interests and is based on the theory of career and professional choice. Thus, J.L. Holland made several types: the realistic type, the investigative type, the enterprising type, the social type, the artistic type and the conventional type. The inventory presents a range of activities and occupations for each type described, and students will choose which types of activities and occupations they prefer.

Depending on the score obtained, they will identify a personal code, code based on which they will fit into a certain profile. The inventory includes 120 items, 20 for each type of interest. The items are presented in the form of short descriptions of activities, the formulations starting with verbs in the subjunctive mood, 2nd person singular with the aim of orienting the subject to answer thinking strictly of himself.

For each item, the subject must choose one of three answer options: 2 - for the activity he likes, 1 - for the activity he is indifferent to and 0 - for the activity he does not like. Each of the inventory items corresponds to one of the six orientations that I described in the chapter dedicated to the theoretical framework. The inventory can be managed individually or collectively. Subjects usually manage to complete the answers to all 120 items in 20-30 minutes.

The instructions are given verbally, so that all subjects understand correctly how to fill them in. Subjects' answers are rated according to a specific methodology. Add up, vertically, all the points entered in each of the 6 columns on the answer sheet, and the obtained totals are entered in the space reserved in the last part of the answer sheet. Each column corresponds to one of the types of interests described: realistic, intellectual (investigative), artistic, social, entrepreneurial and conventional.

b). The Gardner exercise for identifying the type of intelligence (Tepelea, 2001) - the exercise is intended to establish the type of intelligence among the 8 multiple intelligences identified by Gardner. He believed that people do not possess only one type of intelligence, but can have a combination of them. This exercise includes 79 questions, with items specific to each type of intelligence. Next to each item is written the figure corresponding to each type of intelligence, a figure that the subjects must circle if the sentences are true for them. The numbers are summed for each type of intelligence, and the highest scores indicate predominant intelligences.

It can be administered individually or collectively. The questionnaire is paper-pencil type, with collective administration, effective working time 15 minutes. Answers to the items require honesty, there are no right or wrong answers.

Depending on the scores obtained on the Holland Interest Questionnaire, the subjects fell into certain areas of interests as can be seen in figure 1. Most of the subjects fall into the enterprising type, and 8 of the 47 subjects have obtained equal scores in two or even three areas of interest.



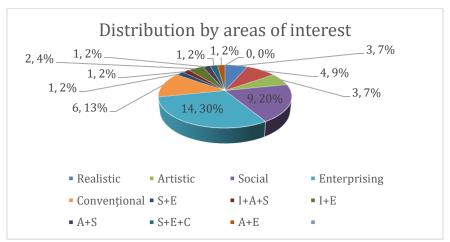


Figure.1

After scoring the Gardner intelligence type exercise, we found that many of the subjects have more than one type of intelligence. Most, however, have an interpersonal intelligence, 10.22%, 5.11% of the subjects have mathematical-logical and rhythmic musical intelligence, 8.17% have a visual-spatial intelligence, 4.9% possess an intelligence of body-kinesthetic type and 3.7% have verbal-linguistic intelligence. The rest of the subjects have a combination of intelligences. Their distribution can be seen in figure 2.

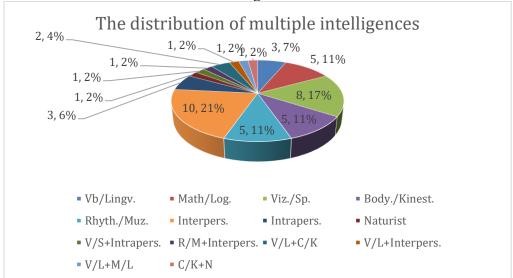


Figure.2

Following the analysis of the obtained results, most girls have interests in the social sphere, 5.23% and entrepreneurial 5.23%, 3.13% are interested in the investigative sphere, 2.9% in the conventional area and also 2.9% of the girls have artistic interests. The rest of the female subjects, 5.23% have interests in combined areas, as can be seen in figure 3.



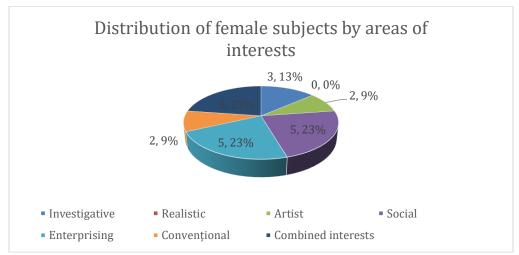


Figure.3

Male subjects have different interests than female subjects, but not by much. Most boys have interests in the entrepreneurial sphere 8.23%, 4.16% of them prefer social and conventional occupations, 3.12% are realistic and only 1.4% are interested in investigation and the artistic side. Their distribution can be analyzed in figure 4.

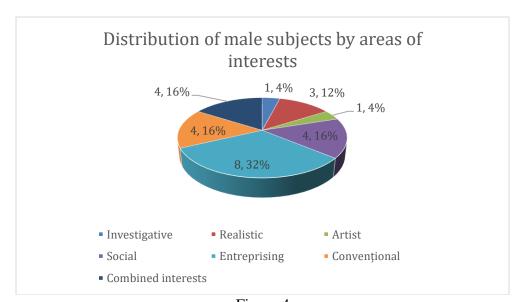


Figure.4

Many of the subjects have unstable interests in several spheres, and the explanation is that the 8th graders have not yet formed a clear, permanent opinion regarding their professional career. Many of them are influenced by the media, family, and their interests change. Lack of life experience is another factor that accounts for being indecisive. As expected, boys are more attracted to interests in the pre-preneurial area, while girls prefer the social, but also pre-preneurial sphere.



Current research suggests that students' career choices are developed from childhood (Super, Savickas, & Super, 1996). However, these choices are not necessarily evidence-based. In fact, Savickas believes that an individual's career path "results from an active process of giving meaning, not from discovering pre-existing facts". (Savickas, 2005, p. 43) Furthermore, research suggests that adolescents' future predictions in achieving professional interests are not correct. In one study, less than half of 9,000 high school graduates achieved their career expectations by age 30. In addition, women tended to work in more prestigious occupations than expected (Rindfuss, Cooksey, & Sutterline, 1999).

According to a research carried out by Chira V. (Văetiși) Lorena-Lavinia in the work "Gender differences in education Social factors, school success and the construction of gender in the school environment", the educational path is influenced by gender, especially at the level of subjects from the final years of professional education. Therefore, patterns, traditions and stereotypes are perpetuated. These refer to the fact that they are jobs suitable for male subjects and jobs suitable for female subjects. When subjects are advised to think about the career path they might take, they mention professions such as education, media or fashion when referring to girls, and jobs that involve physical strength or thinking math when it comes to boys. (Cluj-Napoca, January 2012)

The exercise to identify the type of intelligence revealed that most girls have interpersonal intelligence, which is natural considering their age. It is worth noting that neither girl has mathematical/logical intelligence. The distribution of the type of intelligence of female subjects can be seen in figure 5.

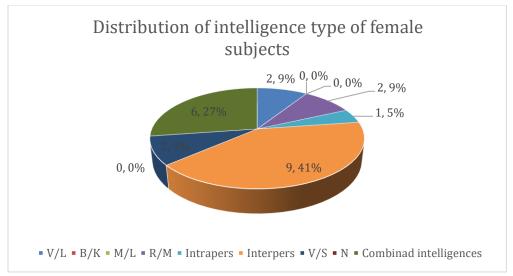


Figure. 5

Unlike girls, 5.20% of boys have logical/mathematical intelligence, and 6.24% have intrapersonal intelligence, which denotes that they are more introverted. 3.12% of male subjects have rhythmic-musical intelligence, 1.4% have naturalistic intelligence, and 1.4% of subjects have combined intelligence. The distribution of intelligence type in male subjects can be analyzed in figure 6.



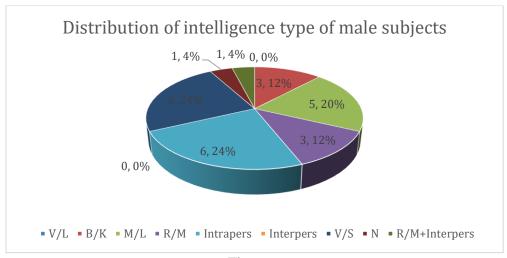


Figure.6

Analyzing the obtained data, we found that the differences depending on the subject's gender in terms of the type of intelligence are clearly observable and to be expected, moreover. It is highlighted that girls are more inclined to talk to each other, which justifies the fact that many have interpersonal intelligence, and boys are more pragmatic, and some of them are more introverted.

The frequency of intrapersonal, mathematical/logical, visual/spatial intelligences is noticeably higher among male subjects, compared to rhythmic/musical, interpersonal, corporal/kinesthetic, naturist, verbal/linguistic, corporal/kinesthetic intelligences. Boys are more pragmatic, more oriented towards logical, visual intelligences, and some of them are introverts. This fact is also due to the fact that they come from families with single parents or who have gone abroad.

There are a number of researches and studies based on Gardner's theory regarding multiple intelligences. They address the difference depending on the gender of the subjects regarding the types of intelligence and highlight the fact that the male subjects are more intelligent in operating more correctly and faster with numbers, so they have a more developed logical-mathematical intelligence in relation to the female subjects feminine. In female subjects, verbal-linguistic intelligence was found to be more developed and specific, given that girls generally like to talk more. (Gardner, H., 2006). It is worth noting that this advantage of boys to operate more easily in the mathematical domain, actually refers to certain gender differences that have been socially constructed and is not related to the abilities of the subjects according to gender. (Francis, 2000)

From the research carried out, we found that the types of intelligence are closely related to the interests of the subjects in the research group. As a function of the type of intelligence they have, subjects have different, diverse preferences. In general, subjects who have the type of interpersonal, verbal-linguistic or visual-spatial intelligence have preferences in the area of social, entrepreneurial or conventional interests, and subjects with mathematical-logical, corporal-kinesthetic, musical-rhythmic, naturalistic or intrapersonal have interests in the realistic, enterprising and conventional sphere.



Vocational orientation of students towards the right profession according to their skills is possible only by knowing the potential that each subject has. Teachers have the duty to discover in each student the abilities, skills, competences, intelligence that make them access fields in which they can yield or even perform.

Conclusions

The present study aimed to highlight the existence of some differences between the gender of the researched subjects, their dominant type of intelligence and the professional interests that characterize them at the moment. The research was carried out with the aim of investigating the professional preferences of the students according to their gender, as well as highlighting some differences between the dominant type of intelligence and the gender of the subjects, respectively the professional interests and their gender, the results of the research may have an important meaning in the educational context.

The obtained results allow the understanding of the concept of multiple intelligence and the connection with professional interests in the process of school and professional orientation of adolescents, these two notions can be taken into account as indicators for school performance and for the characterization of future options related to academic activity.

At the theoretical-concept level, the work contributes to a better understanding and delimitation of the main notions related to the Theory of Multiple Intelligences and the Theory of Professional Personality, as well as an easy passage through the activity of school and vocational guidance.

From a methodological point of view, the present work can contribute to the enrichment of the existing database and to the continuation of research regarding the importance of multiple intelligences and professional interests, as well as regarding the importance of counseling for an optimal school and vocational orientation of students. It would also be interesting to conduct a research based on the information presented in this paper with some data collected at the end of the study years, using the same tests and questionnaires, the same subjects and the same variables. The comparison between the two researches could highlight possible changes regarding the types

A limitation that must be mentioned in the present paper refers to the group of chosen subjects, as they were not selected through a representative sampling at the national level, a fact that requires caution in the generalization of the data regarding the chosen differentiation criteria.

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of intelligence and professional interests of the subjects.

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