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Teaching and learning
the elements of arithmetic and algebra
using the multiple intelligence theory*

Abstract: In this paper, the author analyzes her personal experiences in
applying the theory of multiple intelligences to the teaching of algebra
to below-average 14-year-old students. The research was intended to de-
termine whether dominant intelligence type (as indicated by Gardner’s
typology of multiple intelligences) influences the learning of mathemat-
ics. It was hypothesized that pairing didactic methods with dominant
intelligence types would improve students’ mathematics learning. Two
multiple intelligences tests were given to the students, supplemented by
a questionnaire distributed to their parents and four assessments designed
to identify mathematics learning success: a preliminary test, an ex post
facto test, quizzes, and a student survey measuring self-efficacy and com-
prehension. The students showed improvement in the quizzes and ex post
facto test over the course of the study. This result was particularly ev-
ident when the dominant intelligence type was linguistic. The author
concludes that progress in mathematics education depends not only on
students problem-solving predispositions in a given discipline, but also on
how the teacher organizes the instruction and selects the mathematical
tasks.

Introduction

Mathematics is used in almost every sphere of life, ranging from simple, ele-
mentary daily activities such as shopping, preparing meals, or using electronic

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devices to complex forms of human activity connected with the use and design of modern technology. Thus, a fundamental knowledge of its elements influences, to a greater or lesser extent, individuals’ ability to function in the world. Because mathematics plays such an important role in the various branches of life and science, it often constitutes an integral part of competency exams at various levels, which ultimately raises questions about teaching mathematics at different levels in school. An informal division has long existed in wide social circles: children with scientific minds and those with humanist minds. The assumption has been that, in mathematical subjects, “humanist minds” perform worse than “logical minds”. However, the teacher should be aware that such an assumption is extremely short-sighted and unfair to some children. Following this path Howard Gardner (1983) categorized individuals based on their learning preferences, thereby introducing the Multiple Intelligence theory.

Gardner initially proposed seven types of intelligences: linguistic, logical-mathematical, visual/spatial, rhythmical/musical, bodily-kinesthetic, interpersonal and intrapersonal. Each type of intelligence refers to specific skills or knowledge areas being strongest in a given person. Linguistic intelligence relates to an individual’s communication skills, whether oral or written (Gardner, 1993; Gregory and Chapman, 2006). Logical-mathematical intelligence concerns an individual’s ability to think critically, reason, and solve problems (Gardner, 1993, Gregory and Chapman, 2006). Spatial intelligence corresponds to the ability to visualize (Gardner, 1993, Gregory and Chapman, 2006). Musical intelligence concerns skills associated with rhythm and harmony (Gardner, 1993, Gregory and Chapman, 2006). Bodily-kinesthetic intelligence refers to mental understanding connected with and manifested through the body and is associated with activities such as dancing, gymnastics, and other sports (Gardner, 1993, Gregory and Chapman, 2006). The remaining two types of intelligence concern an understanding of the human condition. Interpersonal intelligence is related to the set of skills involved within interpersonal relationships while intrapersonal intelligence concerns the understanding of one’s own psychological state as well as the set of skills involved within self-reflection (Gardner, 1993, Gregory and Chapman, 2006).

Gardner subsequently distinguished two additional types of intelligence: naturalist and existential. Naturalist intelligence refers to the ability to classify and recognize patterns within nature (Gregory and Kuzmich, 2004, Gregory and Chapman, 2006). In general, this type is associated with science and natural sciences. Naturalist intelligence parallels linguistic and logical-mathematical intelligence in that it is relevant to several subjects taught within the realm of academia. Existential intelligence is understood as the ability to solve problems of a philosophical nature (Smith, 2008).
Although Gardner’s classifications seem reasonable and comprehensive, he clearly indicated that types of intelligence do not appear in their pure forms. In most cases we deal with more than one type, and some are dominant while others play a secondary role. Students’ dominant intelligences manifest themselves through different learning preferences. This observation is very important from a pedagogical point of view and can largely affect the form of the planned didactic activities. The awareness of this cognitive diversity among students entails two kinds of consequences: the lack of acceptance of top-down assumptions about the worse results in the mathematics subjects in case of “humanist” students and the need to develop didactic solutions enhancing students’ learning mathematics performance, regardless of their dominant intelligence type.

Assuming that different students present different learning styles/strengths, depending on their natural and best developed intelligence types, teachers can redesign their classes and adapt the organization of lessons and proposed teaching procedures to students’ learning styles/strengths, taking into account their individual needs. To be able to design and implement the mentioned changes, it is first necessary to reliably determine students’ dominant intelligences and their resulting learning preferences. The teacher is then able to propose the targeted selection of correlated teaching procedures (e.g., organizational forms, methods and meanings, tasks and exercises, teaching aids) required for the successful realization of teaching goals. Of special importance is addressing the specificity of mathematics as a taught subject, which distinguishes it from other subjects because of the abstract concepts, specific methodologies (mathematical method), and language. Thus, teaching mathematics requires a different approach than, say, teaching history, biology, or even physics.

Given the specificity of mathematics as a science and a teaching subject, Krygowska (1977) clearly emphasized the appropriate organization of student activities in the classroom. Her perspective addresses students’ actions and activities while learning mathematics as well as the acknowledgment for mathematics instructors to facilitate and guide these actions and activities. The activity helps young people pass the subsequent stages of intellectual development and make them finally capable of abstract thinking, which is the foundation of mathematics. Having these conditions in mind, it is possible to formulate the research question guiding the current study: Does a student who performs poorly when taught mathematics in the standard way improves his/her performance when taught using methods suitable for his/her recognized dominant intelligence profile? Supporting questions include:
• In what kinds of activities do students of given recognized dominant intelligence most willingly engage?

• Assuming that the modification of methods used to teach mathematics topics by adapting to dominant intelligence types positively impacts teaching results, is the impact of the same magnitude for all types of intelligences?

• Does the introduction of new teaching methods adapted to the dominant intelligence type worsen the performance of persons with other intelligence types?

Due to research constraints (during research period, I worked as a teacher of Algebra I with a support course), the study was limited to a relatively narrow subject area—namely, the elements of algebra from the program for freshman students at an American high school.

To carry out the study, several steps were required. First, it was necessary, within technical possibilities of the conducted research, to obtain reliable information about dominant intelligence types for participating students. This step required selecting and refining the tools appropriate for conducting the aforementioned assessment, conducting the assessment tests, and analyzing of the results. To assess the dominant intelligence types, I used a set of two self-made questionnaires (MI tests) assessing students’ intelligence types; a questionnaire for parents to diagnose students’ dominant intelligence type; and a take-home questionnaire for students used to identify their dominant types of intelligence. The applied set of tools (i.e., two MI tests/questionnaires combined with questionnaire for parents and homework completed by students) is a product of my personal experience in incorporating Gardner’s theory in my teaching practice.

Second, I developed a set of lesson plans for the algebra topics covered by program that consisted of carefully selected procedures (forms of the lesson, suggested student activities, teaching means and aids, tasks and exercises), directed to previously determined developed/strongest intelligence types. Before it was possible to design adequate lesson plan/scenarios, it was necessary to choose appropriate teaching procedures and determine which of them were directed to the individual intelligence types recognized by Gardner. Detailed lesson plans including the description of activities, functionally defined lesson goals, and detailed descriptions of the planned teaching procedures and instructional strategy can be found in the second chapter (pages 71 to 156).

Finally, after completing the results of the psychological diagnosis of students participating in the study, I conducted a series of lessons according to the prepared lesson plans during the first semester of the 2009-2010 school year.
In accordance with the prepared timetable and using the developed tools (see below), I simultaneously examined the state of mathematical knowledge and skills of the experiment participants to examine the research problem: Is it true that, in the case of students not successful when taught in a standard way, the proper selection of the organizational form and educational procedures – taking into consideration their recognized dominant types of intelligence and in line with functional strategy of mathematics teaching that helps steer students’ activity in the proper direction – positively affects mathematics teaching outcomes?

To monitor and verify students’ knowledge and skills in topics covered in the classroom, I developed a set of research tools-namely, a pre-test (T1); a series of 2-3 minutes quizzes (S1-S7) called bell ringers, carried out at the start of each lesson; a post-test (T2), and questionnaires for students. The use of diverse research tools resulted in not only a relatively objective assessment expressed in scores of the post-test (T2), but also a subjective self-assessment of students, which allowed for the potential further identification of causes of difficulties or failures.

To ensure that the research is valid and relevant to the practice of teaching, I selected the research sample based on my own school experiences. I chose the students from a particular class of one of the public schools; thus, they were examined in a natural school situation. During the design phase of my study I focused my attention on a group of students sent to supporting classes, which offer an extra hour in core subjects (English and mathematics). These classes are designed to allow students to catch up on material and stay in regular classes.

The dissertation consists of an introduction, which briefly outlines the main objectives of the study and tasks to be performed, and four chapters, a conclusion, a bibliography, and an appendix. The first chapter provides an overview of the theoretical foundations of the research. It briefly discusses the system of secondary education in the US and specifies the conditions of the didactic experiment. It also contains a short presentation of Gardner’s Multiple Intelligence theory and a brief report of attempts to apply his ideas in educational practice. Then I discuss the main assumptions of the functional method of teaching mathematics by Zofia Krygowska, as it has been the base of my approach to the preparation of the teaching experiment, while focusing on adapting the didactic actions to the dominant types of multiple intelligences as determined for study participants. The presentation of the research methodology and the organization of the experiment, as well as detailed scenarios of the lessons in the research, are provided in chapter two. Chapter three contains the analysis of the experiment results. Chapter four contains
complementary research, including the presentation and analysis of individual cases and the analysis and conclusions of the whole-class discussion activities, customized to different types of students’ intelligences. The paper ends with conclusions, a bibliography, and an appendix containing 20 attachments.

Analyzing the research material determined whether the experiment decreased the number of incorrect answers in each group (based on intelligence type) in the post-test compared to the pre-test. A comparison of the results of the pre-test, post-test, and quizzes/bell ringers was conducted separately for students with a given dominant intelligence and separately for those with least-developed intelligence, comparing:

- the average number of incorrect answers in quizzes/bell ringers 1 to 7;
- the change in the results of quizzes/bell ringers with the progress of the experimental block;
- the average number of incorrect answers for the pre- and post-test; and
- the change between the pre- and post-test results.

Figure 1 shows data on the average change in the number of incorrect answers between the pre- and post-test for each type of recognized dominant intelligence while Figure 2 provides this information for each type of least-developed intelligence.

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**Figure 1.** Change in the number of incorrect answers for recognized dominant intelligence type.
Figure 2 proves that all students achieved better results at the end of the experiment (the results of the post-test T2 compared to pre-test T1; note the absence of people with the dominant logical-mathematical intelligence among the participating students), thereby justifying the conclusion about the real improvement of students’ learning performance after completing the entire block of lessons included in the experimental program. For each group of students with a given dominant intelligence, the post-test results show a significant improvement compared to the initial test, which corresponds to better results for the class as a whole. However, some students – those with the dominant linguistic, linguistic and intrapersonal, and intrapersonal intelligences – improved their performance much more than others. This fact has several possible explanations. First, as a teacher I am obliged to implement a centrally imposed curriculum which is tailored mainly for people with logical-mathematical and linguistic intelligences. Thus, some elements of the program might make it easier to learn for students with linguistic intelligence. In addition, didactic actions addressed to people with dominant intrapersonal intelligence (inclined to work independently) and the dominant linguistic intelligence are much easier to implement in the classroom than other forms tailored to the needs of students with less typical intelligence profiles. The teacher can address these forms to students in a much more precise way and, therefore, they more effectively influence students’ performance. Finally, the very nature of the subject of mathematics probably works in favor of students with dominant intrapersonal or linguistic intelligences.

For all students (see: the average change for least developed intelligence), improvement on the post-test scores in relation to pre-test scores exceeds 50% for all recognized least-developed types, indicating a real improvement in the students’ performance after completing the entire block of lessons included in the experimental program. Looking at the values representing the average
number of incorrect answers in the pre- and post-tests, it can be concluded that the persons with the least-developed interpersonal intelligence had the most difficulty giving correct answers. However, this did not prevent them from obtaining a significant performance improvement at the end of the experimental block, showing a 53% change (see Figure 2). Similarly significant changes are evident in the case of the other two groups of students with the least-developed types of intelligence (i.e., linguistic and logical-mathematical).

The biggest reduction of the number of incorrect answers took place in the case of students with linguistic intelligence as the least-developed one. It is worth emphasizing that the change in the number of incorrect answers given by students with the logical-mathematical as the least-developed intelligence reached 55%. Interpersonal intelligence was also in the group of least-developed intelligences; this fact is important because one can observe a promotion of the didactic approach using group work and other activities based on interactions that, in the light of the results, might prove not entirely accurate (note that among study participants there was no single person with intrapersonal intelligence as least developed). Therefore, the promotion of individual learning should not be abandoned lightly. The experiment results described here show that the dominant types of student intelligence – hence, their learning preferences – to a large extent determine the school’s success. The formulation type should be emphasized rather than categorizing students as intelligent and less intelligent.

The standard school programs, which are not based on Gardner’s theory, are focused on the typical approaches to learning for a given subject. In the case of mathematics, this means adapting the program objectives to the needs of students with dominant intelligence types – namely, logical-mathematical and linguistic. This clearly indicates shortages in the mathematics programs. However, this does not justify chaotic attempts to expand math curricula in order to include methodology typical for all intelligence types, as this would inevitably lead to chaos and disrupt the natural course of work with the students. Instead, students’ intelligence profiles should be identified across grades, as presented in this study. I use the term profile with deliberation, as it includes several components: the dominant types of intelligence, the least-developed types of intelligence, and adequacy of educational procedures to the aforementioned components.
Summary and General Conclusions:
Use of experimental methods of teaching mathematics adapted to the types of intelligence represented by students

Several conclusions can be drawn based on the analysis and discussion of the results of this study:

- All students’ test performance gradually improved.
- All students’ post-test results improved in relation to pre-test results.
- Students with the linguistic intelligence achieved better results than their classmates.
- A particularly significant improvement was observed among students with dominant intrapersonal intelligence.
- Students with dominant interpersonal or bodily-kinesthetic intelligence showed a relatively small improvement compared to other students.
- For least-developed intelligence as a criterion, all students showed improvement.
- Significant improvement was observed in case of students with logical-mathematical intelligence as the least developed.

If the diagnostic tests showed that the majority of students in a class have dominant logical-mathematical and linguistic intelligences, one might think that this is a “good” class. This would mean that, in the case of this group, the realization of the standard mathematics program will bring the desired effect, which is the successful acquisition of mathematical knowledge to enable students to pass through the successive stages of education and function properly in later life. On the other hand, in real situations, one should rather expect that the majority of students will have other types of intelligences than logical-mathematical or linguistic. As a result, their learning styles will be not compatible with the planned objectives of the standard mathematics programs and textbooks. Following the standard course of instructions might lead to a widening of students’ competency gaps and, thus, a worsening of their results. It is quite probable that in this case we will deal with a “weak” class. It seems, however, that by far the teacher most often works with a class consisting of people representing different profiles of intelligences; thus, the profile of the whole class becomes mixed. This in turn allows for predicting that among the students of such a class there will be individuals performing
very well under standard teaching program, but there will be also others not able to acquire knowledge sufficient to achieve satisfactory results.

As it turned out, predispositions of the majority of students in the class participating in the experiment were not compatible with those assumed in the mathematics program. In such a situation, as in the case of the experimental block presented in this paper, it seems reasonable to implement a methodology adapted to the students’ dominant types of intelligence in order to enable them to acquire the same skills as the students who follow the standard program.

It is also necessary to ensure the development of intelligences that are least developed – namely, logical-mathematical and linguistic. What seems to be of particular importance is the choice of methods and means for accommodating the combination of these two assumptions. Given the inability to introduce fundamental changes to the standard curriculum, it is necessary to adapt school reality as much as possible to the students’ competencies. Therefore, in these classes, care should be taken to develop these students’ types of intelligence in order to facilitate students’ functioning in the standard education.

The advantage of using the theory of Multiple Intelligences in the practice of teaching mathematics is that, while it provided a theoretical base, it leaves the teacher with wide room to maneuver. Teachers can develop their own methodology, tailored to a particular group of people. Teachers are not bound by the necessity to have expensive and sophisticated teaching aids. Most importantly, work on the basis of this theory can successfully be incorporated into the standard teaching program and does not require substantial amounts of time or money. Such characteristics make it easier to use the developed methodology in the regular teaching program.

As observed during my study, predispositions of most of the tested students were not compatible with those assumed in the mathematics teaching programs. Perhaps in the case of many of them this was the reason why they were excluded from the standard teaching course. Of course, it is not possible to unambiguously state that the only reason of a school failure is inadequate teaching methods, but I would like to point out this issue as one possible cause.

The results of the research strengthened the hypothesis that, in the case of weak students, the use of didactic techniques arising from the concept of the functional approach to teaching mathematics while considering the diversity of students’ learning styles consistent with their determined dominant intelligence types can significantly improve their performance. In addition, making students aware – based on Gardner’s theory of Multiple Intelligence – how complex their learning ability is might provide additional incentive for self-study or looking for new solutions in life problems not directly related to education.
One of the ways teachers can increase students’ chances of educational success is the practical application of the Multiple Intelligences theory and its resulting consequences. In this context, the application or implementation of this theory should be understood not only as the implementation of diagnostic procedures, but also as the resulting modification the teaching methodology. Given the current socio-economic situation, one cannot expect major reform of mathematics education. Therefore, today it is the teacher’s responsibility to implement methodology to increase students’ educational chances for success.

To summarize the above discussion:

- Including the theory of Multiple Intelligence in the teaching of mathematics might have a positive effect.
- Modification of the teaching methodology by incorporating consequences of the theory of Multiple Intelligences and functional approach to teaching mathematics allows the inclusion of poorly performing students in the regular course of teaching.
- The concept of Multiple Intelligences can be successfully applied at different educational levels.
- The selection of didactic tools applied in the teaching of mathematics should take into account the students’ dominant intelligence types.
- In order to successfully apply the theory of Multiple Intelligences in the teaching of mathematical concepts, the teaching should be individualized to a greater extent than it is currently.
- Individualized learning should be preceded by determining individuals’ dominant intelligence profile and consequently should address individual learning styles and competencies.

The benefits of applying the theory of Multiple Intelligences in teaching mathematics include:

- it can help many students who are not performing well when conventional teaching methods are used;
- it can help increase the self-esteem of students and thereby reduce discipline problems;
- it fosters motivation and enthusiasm for learning mathematics;
- it develops a deep understanding of mathematical concepts and helps acquire proficiency; and
- it prepares students for higher level classes;
Proposals for further activities include:

- continuation of the research on the application of the theory of Multiple Intelligences in mathematical education at all levels in real classroom conditions;
- documentation of the benefits of the Multiple Intelligences theory approach;
- promoting the benefits of the Multiple Intelligences theory approach among teachers and administrative staff; and
- increasing financial means for vocational training toward the use of Gardner’s theory in teaching mathematics.

Limitations and Directions for Further Research

The research presented in this paper justifies the choice of this the case study method; nevertheless, it has several general limitations as well as limitations of particular importance in case of our study. The general limitations, as listed by Hodkinson and Hodkinson (2001), are:

- it generates to much data for easy analysis,
- large scale application is very expensive,
- the complexity observed is difficult to represent simply,
- it is difficult to quantify obtained results,
- the conclusions can hardly be generalized
- the most interesting results are obtained when the researcher intuition is maximized and consequently their objectivity is questionable,
- the findings are easy to refute,
- the method does not provide answer to many relevant research questions.

In the case of the research described herein, the financial factor did not play a major role as it was conducted in an ordinary school environment within the framework of a standard course of lessons that would take place regardless of the research. However, conducting a similar study on a larger scale would likely require large amounts of money because developing scenarios and analyzing data are time-consuming tasks.

Despite its small scale, the project produced a huge amount of data. For example, it included information on each student’s learning preferences as well
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as data related to the methodology. Some of the data were numerical in nature and required translation into teaching purposes and into conclusions related to the hypothesis presented in this paper. The qualitative information needed to be expressed in numbers in order to identify relationships. Thus, it can be assumed that this kind of research conducted on a larger scale would likely be extremely time-consuming.

Moreover, the case presented does not allow drawing any more general conclusions. Only a small group of students was researched, and each student represented a specific kind of intelligence. To obtain more general results, the strategy should be probably being changed. A better idea would be to study a large group of students representing, for example, linguistic intelligence and having problems with learning mathematics. A panel study designed this way could provide a basis for comparisons, and its findings would be of more general nature.

Finally, we need to be aware that the theory of Multiple Intelligences is itself an important limitation of the research. It comes with a predefined classification of intelligence types that automatically excludes the “creation” of other types. In addition, Gardner’s intelligence types might be more appropriate for some communities and less appropriate for others. As with any typology, the author adopted specific criteria as a basis of diagnosis of the dominant or least-developed type of intelligence, but many aspects could not be considered.

As only one hypothesis was proposed, the research findings relate solely to it and no other hypothesis, resulting in an important limitation of the current study as no hypotheses were developed about the presentation of the covered topics, subjective choice of forms of educational activity, or the fact that the study was carried in supporting class. It is worth asking whether similar results would be achieved with the students from a regular class. The answer would provide valuable information. Future research should focus on minimizing these limitations.

Comparing students with a similar intelligence profile would help determine which strategies are appropriate for the given intelligence. This does not mean, though, that studying groups with different profiles within the group is not justified. Yet we should first consider the role that the theory of Multiple Intelligences can play in the school environment. Completely different approaches are possible. One can try to provide students with a completely new kind of task with a higher degree of difficulty and observe how they resolve it. Data obtained in this way would differ materially from those presented above.
Given the relatively small number of studies on the teaching of algebra in high school, research presented in this paper can be a good starting point, especially as current methods are losing effectiveness. Perhaps part of the problem is ignoring students’ individual learning aptitudes. We should, therefore, try to create a learning environment that fosters the acquisition of knowledge while simultaneously constantly striving to improve the identification of students’ abilities, thereby enabling both teachers and students to step confidently into a new era of development.

References

Streszczenie

Od wielu lat, w szerokich kręgach społecznych funkcjonował nieformalny podział na dzieci o umysłach ścisłych i humanistów. Podział ten służył niejednokrotnie jako argument do wyjaśnień, dlaczego różni uczniowie tej samej klasy osiągali różne wyniki. Przyjmowało się, jako niekwestionowane założenie, że w przedmiotach matematycznych „humanisci” będą osiągali gorsze wyniki niż „ścisłowcy”. Pedagog musi jednak zdawać sobie sprawę, że takie założenie jest niezwykle krótkowzroczne i krzywdzące dla pewnej grupy dzieci. Howard Gardner, podążając tym tropem (Gardner, 1983), dokonuje podziału jednostek ludzkich ze względu na różne sposoby uczenia się, wprowadzając pojęcie wielorakich inteligencji.

Efektem dominowania u danego ucznia pewnych typów inteligencji spośród wyróżnionych przez Gardnera, jest występowanie różnych stylów uczenia się. Jest to niezwykle istotna uwaga z pedagogicznego punktu widzenia, która w dużej mierze wpływa na kształt projektowanych działań dydaktycznych.

Uświadomienie sobie tej różnorodności poznawczej wśród uczniów niesie za sobą dwojakiego rodzaju konsekwencje.

- Z jednej strony – brak akceptacji dla odgórnego założenia o gorszych wynikach w przedmiotach matematycznych wśród uczniów o orientacji „humanistycznej”
- Z drugiej – konieczność opracowania takich rozwiązań dydaktycznych, które pozwoliłyby osiągać dobre wyniki w nauce matematyki wszystkim uczniam, niezależnie od tego, jakie typy inteligencji u nich dominują.

Stąd wywodzi się idea mojej pracy i zainteresowania teorią wielorakiej inteligencji Gardnera w kontekście nauczania matematyki. Zakładając istnieć różnych stylów uczenia się u różnych uczniów, w zależności od posiadańych i odpowiednio rozwinętych pewnych rodzajów wielorakiej inteligencji, nauczyciel może projektować swoje lekcje tak, aby dostosowywać organizację lekcji i proponowane zabiegi dydaktyczne do stylu uczenia się uczniów, uwzględniając wynikające stąd potrzeby każdego z nich. Zasadniczym celem przeprowadzonych badań było zdiagnozowanie, czy u uczniów, którzy przy standardowym stylu nauczania nie radzą sobie z opanowaniem programu matematyki, odpowiedni dobór zabiegów dydaktycznych, uwzględniający rozpoznanie, dominujące typy inteligencji, wpływa pozytywnie na ich wyniki nauczania z tego przedmiotu?
Opierając się na wynikach przeprowadzonych badań, można wzmocnić hipotezę, że w odniesieniu do słabych uczniów, zastosowanie zabiegów dydaktycznych wynikających z koncepcji czynnościowego nauczania matematyki, przy jednoczesnym uwzględnieniu różnorodności stylów uczenia się uczniów, zgodnych ze zdiagnozowanymi dominującymi typami ich wielorakich inteligencji, mogłoby ich doprowadzić do znacznej poprawy wyników. Dodatkowo uświadomienie młodym ludziom, w oparciu o teorię wielorakich inteligencji Gardnera, jak złożonym tworem jest ich umiejętność uczenia się, może stanowić dodatkowy środek motywujący do samokształcenia lub poszukiwania nowych rozwiązań życiowych, niezwiązanych bezpośrednio ze zdobywaniem wykształcenia. Jednym ze sposobów, jakie nauczyciel może wykorzystać celem zwiększenia szans uczniów na odniesienie sukcesu w szkole, jest praktyczne zastosowanie teorii wielorakich inteligencji i konsekwencji z tego wynikających.