

## Developing computational thinking in preschool with educational robots

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**Abstract:** If we think that today's generation is already growing up among computers, smart devices, we are not surprised by Wing's (2006) idea that computational thinking will be a basic skill, in addition to reading, writing, counting, in the 21st century.

The teaching of computational thinking is widespread internationally, and many countries already include it in the basic education curriculum.

But what about kindergartens? Preschool age is a sensitive period, because many basic skills and abilities develop intensively. This is why the development of computational thinking can be started at this age without the child having to sit in front of a computer. One way to do this is to use an educational robot, which is an excellent tool for developing not only computer thinking but also other thinking skills.

**Keywords:** computational thinking, mental rotation, educational robots

## Innovative competence development methods in adult education institutions in Somogy county

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**Abstract:** The writing of my dissertation was inspired by the improvement of the living conditions of the hard-working people living in my environment who are on the margins of society, which I see in adult education that is equally accessible to everyone.

My research area is Somogy county, which lags behind the national economic indicators, where the number of unemployed and people living in deep poverty is high due to the low level of education, especially in small villages. In my opinion, if adult education could be decentralized to the level of a small settlement, and key and workforce competence development courses could be organized in the spirit of inclusion and experiential pedagogy, the individual's employability and sense of social and economic well-being would increase. In order to implement the decentralized courses, I targeted three target groups, whom I visited with online questionnaires during the quantitative research, and a personal visit within the framework of the qualitative research is underway to achieve representative research. I compiled a separate Google Forms questionnaire for the adult education institutions of Somogy county, the leaders of the settlements and the adult population over the age of 16, which I sent to the heads of the institutions one by one (243 municipalities, 126 companies) and the adults on the social media. to complete a questionnaire. I have not closed the questionnaires yet, but the results so far show that the population needs training, they want to take part in the courses, the adult education institutions are happy to help, but the leaders of the settlements find it difficult to be active.

My goal is to get the help of the leaders of the settlements and the adult education institutions, to establish a good relationship between them in order to achieve a larger number of decentralized courses, which is facilitated nowadays by the Internet. Using ICT tools and experiential pedagogical methods, the learning of adults with basic competencies is more efficient, faster, and more lasting than in frontal education. If an adult

education place (parish, house of culture, library, school) were provided in small villages, or in the course of a joint venture of two or three small settlements, the various social, physical, geographical and social disadvantages would not be an obstacle and ICT-deficient adults it would be possible to carry out the training under proper guidance. It would be desirable for the leaders of local settlements to provide adequate communication, cultural, educational, cultural entertainment, employment, the use of applications, community development, local initiative, and experience in the field of modern digitization. I believe that this is one of the conditions for the disadvantaged to catch up.

I find my research relevant because it sheds light on a burning issue and seeks possible solutions. Lifelong learning - in a rational, knowledge-based, accelerated world is essential for prosperity, survival and economic development in the post-primary education period. In vain is technology, science, the rapid development of technology when human knowledge is incomplete. The regions of our country will develop if people have the right knowledge to use and manage new tools, which requires continuous learning. The basis for the development of innovation in the regions is the training of adequate human resources, so it is important to create education that is accessible to all.

I am aware that the utilization of the results of my research may be difficult, as the solutions outlined in the research may be doomed to failure without inter-ministerial cooperation, in the absence of a low state budget for education and other subsidies. If my hypothesis is confirmed, then the economic level of Somogy county will decrease further and the small settlements will be destroyed

**Keywords:** adult education, experiential pedagogy, innovation

### The impact of high school teachers on the motivations and choices of graduate students for teaching careers

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**Abstract:** Kutatásunk jelentőségét az adja, hogy az oktatási rendszerünk minősége függ attól, milyen tanárok tanítanak, kik lesznek azok, akik a jövő nemzedékét nevelik és ebből a szempontból a középiskolai tanárok korai érzékenyítésben betöltött szerepét hangsúlyozzuk. (Sági - Ercsei, 2012). Polónyi István a felsőoktatásba felvett hallgatók átlagpontszámát vizsgálva megállapította, hogy 2015 és 2018 között egyre inkább a gyengébb tanulmányi teljesítményre képes tanulók kerülhettek be a tanárképzésre. Csökken a pedagógusképzés presztízse is, hiszen a 2018-ban a felvett hallgatóknak csak 50% rendelkezett nyelvvizsgával, holott a legkiválóbb, legfelkészültebb hallgatók a magas pontszám mellett, már legalább egy nyelvvizsgával kerülnek be az egyetemi képzésre. ([http://www.tani-tani.info/gondolatok\\_a\\_tanarkepzesi\\_reformrol](http://www.tani-tani.info/gondolatok_a_tanarkepzesi_reformrol))

A kutatásban választ keresünk arra, kik választják a tanári pályát (társadalmi háttér, gazdasági háttér, környezeti hatások, szülők iskolai végzettsége, eredményesség), miért nem motiváltak a kiváló tanulók (kitűnő, jeles tanulók) a pedagógus pálya iránt ([http://www.tani-tani.info/gondolatok\\_a\\_tanarkepzesi\\_reformrol](http://www.tani-tani.info/gondolatok_a_tanarkepzesi_reformrol)), mennyire van befolyásoló szerepe egy középiskolai tanárnak a pályaválasztás szempontjából. A kutatás során a FELVI adatbázis másodelemzését, illetve egy kérdőíves, egész osztályokat érintő osztálytermi adatfelvételt tervezünk. Az adatfelvétel során arra törekszünk, hogy mindhárom egyetem vonzáskörzetében (Nyíregyháza- Debrecen- Miskolc) két-két egyházi és nem egyházi iskolapárt alakítsunk ki.

A kutatás során figyelembe vesszük az OKM háttérváltozóit, azaz a hasonló társadalmi helyzetű és településtípusú iskolák tanulóinak a megkérdezésére fókuszálunk. A kiválasztott kutatási régió (Észak - Kelet - Magyarország), országunk azon térsége, mely korábbi iskolázottsági mutatói alapján a leghátrányosabb

területe az országnak, miközben sok a középiskola és a felsőoktatási intézmény. A kvantitatív felmérés mellett a FELVI adatbázisának, a tanulókra vonatkozó adatait is használjuk.

A kutatás várható eredményei alapján képet kapunk a végzős, középiskolás diákok pályaválasztására gyakorolt tanári hatásról, (a pedagógus személyiségmarketingjéről) a jobb teljesítményt nyújtó tanulók vizsgálata során a pályamotivációjukról, valamint a marketing és az oktatás kapcsolatának újszerűségéről, ha az érettségire, mint munkaerő – piaci elvárásként tekintünk.

**Keywords:** pályamotiváció, rekrutáció, kontraszelekció, karizmatikusság, tanári professzió, személyiségmarketing

### Kahoot! - Áldás vagy átok?

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**Abstract:** Az élményalapú fizikaoktatás és az IKT eszközök használata jegyében tanítási kísérletet végeztem: minden óra végén a Kahoot nevű játékos "szavazóprogram" segítségével visszakerdeztem a diákoktól az aznapi órán elhangzottakat. A módszertől azt vártam, hogy a diákok motiváltabbak az órai figyelésben, a kontrollcsoport eredményeivel szemben a diákok jobban fognak teljesíteni a témazárón, valamint, hogy az órák jobb hangulatban, játékosan telnek.

Az előadásomban ennek a kísérletnek az eredményeit mutatom be.

**Keywords:** IKT, élményalapú, fizika

### Possible adaptation of the Gardner concept in nursery, in Hungarian and German language areas

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**Abstract:** Ismertetésre kerülő vizsgálatomban arra a kérdésre keresem a választ, hogy Gardner többszörös intelligenciák (TI) koncepciója (Gardner 1983, 1999, 2006, 2020) alkalmazható-e a bölcsődei intézményi gyakorlatban, és a gyermekek aktuális állapotát, fejlődését megfigyelni hivatott módszertani lehetőségként értelmezhető-e. A kérdés relevanciáját alátámasztja, hogy a bölcsődei szemléletmód magába foglalja az inklúzió igényét (Varga 2008), azaz olyan komplex látásmód használatát célozza meg, mely feltárja a család és a gyermek erősségeit és gyengeségeit, majd az erősségeket kiemelve, a hagyományokat, értékeket hangsúlyozva, a családtagok személyes bevonódásával, valamint az egyéni bánásmód érvényesítésére törekvő pedagógiai aspektus mentén igyekszik a gyermek kompetenciáit, egyéniségét, intelligenciáit kibontakoztatni. A pilot kutatás egy hazai és egy ausztriai, település-szociológiai mutatói tekintetében több marker mentén hasonló kistélepülés bölcsődéjében történt.

Kutatásom célja felmérni, hogy a gardneri (TI) közül melyek figyelhetők meg a bölcsődébe járó gyermekek, illetve nevelőik körében. Vizsgálom továbbá, hogy adaptálható-e a gardneri elmélet az életkori sajátosságok figyelembevételével, valamint összeegyeztethető-e a bölcsődei nevelés alapelveivel. Emellett dokumentumelemzéssel vizsgálom az iránymutató szabályozás egyezéseit és különbségeit.

Pilot kutatásom során az intézményekben dolgozó kisgyermeknevelők intelligencia profilját intelligencia-profil kérdéssorral vettem fel (Dezső 2014).

A kisgyermekeket mindennapi bölcsődei tevékenységük során figyeltem meg az őket ellátó nevelőkkel együttműködve, melyet, mivel ebben az életkorban nem közelíthetünk a gyermekekhez feladatorientált módon, így gyakorlati foglalatosságuk során, empirikus módon végeztem. A kutatásban résztvevő gyermekek szüleivel a kikérdezés módszerét alkalmaztam, kérdőíves vizsgálattal, a kisgyermeknevelők általuk elvárt személyiségjegyeire vonatkozóan, melyből következtettem a szülők által fontosnak tartott intelligenciákra. Miután az egyes intelligenciák a bölcsődés korú gyermekekkel való foglalkozás különböző területein – játék, mozgás, gondozás, ének, mondóka, alkotó tevékenység, vers, mese, tanulás, a környezet aktív megismerése – felszínre kerülnek, folyamatos detektálással a gyermekek bölcsődei élete során akadnak olyan helyzetek, hogy mind a nyolc intelligenciát fellelhetjük viselkedésükben.

A kutatás eredményei egyezést mutatnak a két intézmény tekintetében. A kisgyermeknevelőknél az interperszonális és a nyelvi intelligencia mellett a természeti intelligencia relevanciája is kimutatható, a szülők számára pedig a nyelvi intelligencián túl, az inter- és intraperszonális intelligencia fontossága igazolódott.

**Keywords:** intelligenciaprofil, bölcsődei nevelés

## Hungarian Students' Higher Education Plans Abroad

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**Abstract:** Catching and keeping the children's attention in elementary school is pivotal. This requires activities that offer a great deal of experience to them. Gamification is an excellent tool for this purpose. The aim of my study is to present the idea of gamification, its characteristics together with its positive and negative effects and to assess its effectiveness in geography classes through the project called „Be the worlds' best detective! i.e. In the footsteps of the old Europe's mysteries". The aim is to present the results of one of the possible application of gamification. The collection of background information took place in May 2021, searching for an answer to questions like how would the pupils regard gamification, how would gamification function in elementary school, how does it affect the planification of the lessons. The project devised in the school year of 2020/2021 targeted 25 fourth graders of an urban school (10 girls, 15 boys), the participation being 100%. During the pilot part of the project, I surveyed their motivation and their attitude towards learning using questionnaires developed for this purpose. As a result of the survey, it has been outlined that pupils learn because they find this process interesting and important. They would like to learn new things because their future is important to them and they also seek approval from other people. In order to get to know new things, there are various learning styles popular among them like searching for examples related to the subject material, learning to reproduce the material in their own words, or highlighting the main ideas of a topic. Their least favorite methods are copying, learning by heart or summarizing. Their attitudes towards learning is mainly influenced by wanting to continue their studies, have a good position in class and prevail. Contrary to this, making surveys and learning persistently has proven to be least effective among them. The performance during the gamification project was constantly measured through the clues gathered by the pupils. Considering their performance, the majority of the class has reached the highest level together with the highest status. The lowest position was represented only by one or two participants. Their interest towards geography was assessed through a survey made of eight questions. The result has shown that geography is considered to be interesting, useful and liked by many of them. The most favorite parts of the class were: projections, discussions about geographic peculiarities, groupworks and common experiences. At the end of the pilot project, the pupils had

the possibility to express their observation and opinion about the activity by writing individual compositions. As a result, gamification has had a positive impact on them. This method has helped them to learn by playing and acquire geographical knowledge through experience. The compulsory and optional detective work contained exciting yet accessible tasks that kept the pupils engaged. They participated with pleasure in these gamified geography classes, not feeling the burden of learning. The active participation has been assured (2/3 of the participants has gained the highest rank), their attention has been maintained through the whole month, they had the possibility to express themselves (to solve the task according to their own imagination), the feeling of autonomy has had a positive effect on them (they had the possibility to choose the tasks). Taking all into consideration, it can be concluded that gamification in geography classes has a positive impact upon pupils. Its correct application in elementary school is a good opportunity, innovative and highly recommended.

**Keywords:** gamification, teaching geography, motivation

### The role of playful methods in the teaching of religion and ethics

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**Abstract:** In my research, I deal with the pedagogical application of play in the teaching of religion and ethics. I carry out theoretical and methodological research to define the role of play and to make pedagogical practice more effective in the use of play in the classroom (Urbán, 2017), including in faith and morals classes and in extra-curricular pastoral forums: e.g. faith camps, parish programmes, faith communities' programmes.

I will explore the possibilities of adapting the different games to pedagogical purposes through a literature review, theoretical and practical studies adapted to the specific characteristics of teaching of faith and morals.

One aspect of my research is to explore the use of playful methods to demonstrate and analyse differences between people and social groups, thus showing the impact of play on education, behaviour, children's personal development and acceptance of each other. In all these respects, how the use of playful methods helps to promote integration and inclusion, to learn about social norms and thus to develop the right moral values in children and, last but not least, to learn about and internalise faith and religion.

**Keywords:** playful methods, game, religious education, ethics

### Possibility to take into account student diversity among students with disadvantages along the lines of Gardner intelligence

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**Abstract:** Gardner többszörös intelligenciák (TI, 1983, 1999, 2006, 2020) elmélete szerint az emberek, így a tanulók is több, akár autonóm intelligenciával rendelkeznek és mindenkiben más-más intelligenciák dominálnak, mindannyian eltérő intelligencia-profillal rendelkezünk. Az elmélet oktatási alkalmazásai



világszerte elismertek (Armstrong 2017, AERA 2020), azonban a gardneri koncepciót is keretként használó regionális tehetséggondozással kapcsolatban kimutatott, hogy az ismertként artikulált elmélet valós fogalmi keretnek értelmezése hiányos (Dezső 2021).

Kutatásom célja, hogy megvizsgáljam egy a pedagógusok adekvált pedagógiai kultúráját egy érintett oktatás intézményben. Céлом, hogy megvizsgáljam, hogy egy cigány/roma nemzetiségi képzést kínáló gimnáziumában dolgozó pedagógusok mennyire ismerik a gardneri koncepciót. A vizsgálat konstruktivista szemléletű (Nahalka 1997), a fogalmi váltás (Korom 2000, 2003) szükségszerűségét feltételezi az érintett pedagógiai közösségekre vonatkozóan a későbbiekben tervezett szakmai fejlesztések értő intézményi szintű koncepcionális befogadása, kidolgozása és alkalmazása érdekében, a vonatkozó mítoszok, tévképzetek (Gardner 1995; Nagy-Czirok 2018; Dezső 2021) újra-konstruálásának szükségszerűsége miatt.

Céлом, hogy feltárjam, milyen szakmai humán erőforrás háttérfeltételei vannak a gardneri koncepció bevezetésének. Feltérképezem, hogy rendelkezésre áll-e ennek előfeltételeként a vonatkozó intézményi kultúra. Felmérem az elméletet övező körvonalazható tévképzeteket. Kérdőíves (Preisendorfer, 2021) vizsgálatommal keresem a választ az alábbi kérdésekre: Ismerik-e az érintett pedagógusok a gardneri elméletet? Amennyiben ismerik, alkalmazzák-e munkájuk során? Elképzelhető, hogy ismerik, de csak részben, vagy hibásan adaptálják a teóriát? Abban az esetben, ha nem hallottak még a TI elmületről, elképzelhető, hogy széleskörű módszertani ismereteik következtében ösztönösen építenek a Gardner által leírt egyes tanulói intelligenciákra? Amennyiben igen, melyekre és milyen módokon?

Kapott eredményeink alapján megállapítható, hogy a pedagógusok töredéke alkalmazza saját bevallása szerint az elméletet, s akik önbevallásuk szerint alkalmazzák, nem ismerik alaposan a teóriát. A pedagógusok ugyanakkor ösztönösen mozgósítják az egyes tanulói intelligenciákat, főként szaktárgy-jelleggel. Annak érdekében, hogy a gardneri koncepció a tanulási-tanítási folyamatok során intézményi szinten konceptualizáltan szerves részét képezhesse a pedagógiai kultúrának, az érintettek körében fogalmi váltásra van szükség.

**Keywords:** többszörös intelligenciák, pedagógiai kultúra, fogalmi váltás, hátrányos helyzet

## Working Students in STEM Higher Education

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**Abstract:** Although several factors can explain the high dropout ratio in STEM courses, our previous research suggests that student employment alongside studies can also have a significant explanatory factor concerning dropout ratios (Kocsis & Pusztai, 2020; Kovács et al., 2019a; Kovács et al., 2019b). The changes affecting the economic situation and the labour market processes can be explained by the fact that students have started to find a job during their studies, even if for different reasons, they have become active participants in the labour market processes in recent decades. Working alongside learning reduces the time spent on studies and keeps students from embedding in institutional culture, integrating their academic experience, thus increasing the risk of dropout (Riggert et al., 2006; Darmody & Smyth, 2008; Perna, 2010; Kovács et al., 2019a). Embedding in university culture, different interactions with faculty may act as a protective factor against drop-out.

We examined the communication of working students with teachers, with particular reference to STEM areas. The data are collected in the large sample PERSIST 2019 student database recorded in the academic year of

2018/19 (N=2199). The data collection was carried out in one of the easternmost higher educational regions of the European Higher Education Area.

The research was carried out in higher education institutions in the eastern region of Hungary. In the present analysis, we used the data of the Hungarian sample (N=1045). Our results suggest that communication with teachers a significant proportion of students are not typical, especially in the medical and health sciences and students in natural science courses. According to the results of the linear regression, the gender, form of training funding, and study field have significant explanatory power. These are the factors that most determine contact with teachers, and student employment has no influential power.

**Keywords:** Student employment, STEM education, academic performance

### Cooperative classroom nowadays in Hungary

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**Abstract:** Applying cooperative work in classrooms is a well known phenomenon among educators. But how should it be used to be effective in mathematics classrooms? Is it possible or advisable to apply it among every age group or should one avoid it in some circumstances? What research know about it? How effective are professional development programs?

Among others I would like to present some idea about these questions and my research findings in Hungary.

**Keywords:** cooperation, pair work, mathematics education

### The History of Periodicals in Hungarian Secondary Mathematics Education between 1867 and 1956

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**Abstract:** This presentation will be devoted to the history of the Hungarian mathematics education journals from 1867 to 1956. The studies of journals became popular in recent years because they permit to understand better the development of mathematics education and what were the hot issues at different periods and in different countries.

The study utilizes the analysis of the historical documents and archive materials. The research focuses on two Hungarian periodicals, Középiskolai Tanáregyesületi Közlöny (Journal of the National Secondary School Teacher's Association) published between 1867 and 1944, and A matematika tanítása (Teaching of Mathematics) published between 1953 and 1956.

Specifically, I will attempt to address the following questions: How did these periodicals for secondary mathematics education change between 1867 and 1956?

a. In content? What topics were covered during this time, and how did the topics change over time?

b. In approach? How were pedagogy methods emphasized in the articles?

This primarily qualitative research is collected sources from National Széchényi Library and National Educational Library and Museum, both located in Budapest, Hungary. The research is employed systematic methodology for the qualitative comparison to answer the research questions.

**Keywords:** mathematics education, periodicals, Hungary

### Measurements with a thermistor thermometer in secondary school

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**Katalin Kopasz**

**Abstract:** Over the past few years, teachers have faced an increasing challenge in attracting and retaining the interest and attention of students, especially in science lessons. Physics is at the bottom of the popularity scale. The stimulus-rich environment of our time contributes to the decline of what was once a highly prestigious subject, which is little able to compete with classical experiments that are difficult to carry out with the experimental equipment found in neglected and worn-out laboratories. The increasingly popular, exciting and interesting modern devices, microcontrollers and smartphones, which are easy to obtain at little cost, can be used in classrooms in a well-chosen and well thought-out way to overcome these difficulties.

I would like to demonstrate the production and classroom use of such an easy to build, self-developed thermistor thermometer pair controlled by Arduino. The thermometer pair is based on two NTC (negative temperature coefficient) thermistors. Building the device does not require advanced electronics knowledge or any special experience in the world of microcontrollers. In a workshop, with interested and handy students, several pairs of thermistor thermometers can be produced in a few hours with few tools and a small budget. The instruments produced can be used in classrooms for several small group experiments or online for teacher measurement experiments, from seventh grade to re-considering measurements for the advanced level final exam in secondary schools as well.

**Keywords:** Arduino, physics, thermistor, measurement

### "Let's play doctor!" project in physics class - teaching radiation physics in a different way

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**Abstract:** As a physics teacher, I have been increasingly confronted over the last 5-6 years with the fact that 90% of students are passive recipients in traditional frontal class work, not participating in the class. We are also witnessing a decline in the popularity of physics, with fewer and fewer students choosing it as a subject for their A-levels. Students in the 21st century need to have completely different competences than those who



graduated 20-25 years ago. These three compelling reasons have led me to make increasing use of cooperative forms of work and research-based active learning in both vocational and teaching lessons.

I will present a possible teaching method for a slice of nuclear physics, the application of ionising radiation. The students work in groups, are given a medical case study to read, and have to start "dictionary-ing" new concepts, looking up the diagnostic tools used and how they work. A short presentation is given to demonstrate the knowledge acquired, followed by a home-made board game to measure how well the concepts have been mastered. In addition to diagnostics, the possibilities of radiotherapy will be explored. This will provide an opportunity to discuss computational problems in a way that does not focus on calculus in physics class (which is a challenge and a failure for many students), but rather on the tools needed to achieve the goal: a cure for the patient.

The Let's Play Doctor project, in addition to being a curricular project, also shows that physics has many practical applications and that if a student chooses physics at university, he or she will gain marketable knowledge that can be used to find a job. The workshop was 20 sessions, informal, with many students joining on the go. It was a challenge to reduce the duration to 8 sessions, in line with the curriculum, and to adapt it to a group of 30-35 students. I tried it in one class, another class was the control group. There was no detectable difference in the knowledge measurement results (during online teaching), but the students' feedback showed they were more motivated to learn physics.

**Keywords:** collaborative, inquiry-based learning

### Exoplanet transit analysis in a classroom

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**Abstract:** As a practicing Physics teacher in a secondary school, I frequently experience a problem during lesson, that it is difficult to arouse the interest of the audience with traditional methods. For this reason I have tried to introduce new methods, which would show possible ways of gaining scientific result from real data sets, not just the pure lexical knowledge of the topic. I

have found hugely encouraging how much interest my students showed, regarding the methods of getting such information. Together, we tested how accurate result can be obtained using simple methods, in a currently popular field of Astronomy - Transiting Exoplanet systems. With the participation of 53 students, we estimated the length and depth of Transit and determined the parameters of the HAT-P-7b (Kepler-2) Exoplanet system (transit duration, planet-to-star radius ratio, orbital period, semi-major axis, and star mass).

To get the desired results, we used only simple mathematical methods and approaches, which are easy to understand for all students. This gave them a clear picture, of how to get usable information from a larger data set. They were able to gain insight into the essential process of light curve analysis. We have created an Excel file available to everyone, that automatically calculates the parameters of the planet from student estimates. For more accurate values, we've also made a Python program available to download data from the MAST (Mikulski Archive for Space Telescopes) database and make it easy to use in an Excel file.

**Keywords:** transiting exoplanet, light curve analysis, classroom activity

### Hungarian-Italian bilingual education: a textbook dilemma

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**Abstract:** Hungary's educational policy is paying more attention to the issue of foreign language knowledge. The context based language education's most appropriate tool is the bilingual education, which gives the possibility of a deeper level of language and cultural acquisition. Learning a subject in two languages, also meaning the learning of two scientific cultures (Pelles 2002).

In Hungary there are many English and German two-language training, so research on these are widespread, but it is aimed at less attention to the new Latin languages. In Hungary there are currently four Hungarian-Italian two-language high schools.

This research observes the Kodály Zoltán High School. The purpose of our research is to reveal possible changes compared to 2014 in the life of the Italian Section, regarding two-language textbook need for content-based language teaching. We searched for the answer that there is a textbook shortage. We recorded the questionnaire at the teachers of the Italian Section, present and former native language lecturers at the Italian Section of the institution under review. This gathered data was compared with our previous research in 2014. As a result, it can be said that the two language teaching textbooks needed for content-based language teaching continue to be lacking.

**Keywords:** bilingual education, Kodály Zoltán High School, content-based language teaching, textbook

### **Environmental education in the forest school**

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**Abstract:** Nowadays, children are meeting less and less with nature, its living and non-living components are less known and their role in the functioning of the ecosystems remains hidden. To make future generations, and through them, families more environmentally conscious, we have set a national goal that by the end of primary school, every child attend a forest school at least once.

To facilitate this, a network of forestry forest schools has been created and is maintained by state forestry companies. Most of the courses are also held by company foresters, because they see the vital importance of explaining the role and functioning of forests and the principles and methods of sustainable forest management. So children have the opportunity to observe in the field what they have learned in the classroom, learn by exploring and experiencing, to acquire new knowledge through active participation.

It is a form of environmental education differs from the formal school in the sense that children acquire new knowledge in new exciting locations, in the forest, with new instructor through group work. Students learn about nature in nature. And with the knowledge and experience gained in the forest school, the next generation will be more environmentally conscious.

**Keywords:** forest school, forest, environmental education, experience