

Methodical improvement of the realistic topics of the Science and Environment trainer schooling software through the exam of environmental factors withinside the Hungarian territory of the Kőszeg

Author: Dr. Németh László, Faculty of Forestry, School of Environmental Sciences University of Sopron

Introduction

Students' hobby in herbal sciences and arithmetic declined drastically via way of means of the twenty first century. Science training - which offers the idea for the scholars' international view - is in disaster. In order to get away this disaster a paradigm shift is wanted in training. The methodological way of life of herbal technology public training and the schooling of herbal technology instructors should be renewed. This renewal is supported via way of means of pedagogy of sustainability, environmental pedagogy. Its intention is to increase accountable, environmentally aware conduct, and its instructional method is task coaching.

Project coaching often makes use of strategies which require action, sell scholar autonomy, learner's freedom and growth scholar interest. They create a brand-new gaining

knowledge of surroundings and via way of means of the usage of strategies counting on creativity and discovery they could sell the gaining knowledge of gaining knowledge of and collaboration with different college students.

One of the targets of this dissertation is to discover issues associated with the coaching of herbal sciences thru the assessment of the literature and evaluation of files and to analyze the stairs taken to clear up those issues at the extent of OECD countries, withinside the European Union and additionally in Hungary.

The main intention of my dissertation turned into the improvement of a method for the coaching of the realistic topics of the Science and Environment trainer schooling software. The new gaining knowledge of surroundings is area paintings, the Kőszeg Mountains region is properly perfect for this

-:48:-

reason. The difficulty Science performs a critical position in public training due to the fact college students have the possibility to get like herbal sciences through the information of phenomenon, strategies and secrets and techniques of the herbal surroundings.

My intention turned into to increase a chain of measurements which sell task paintings and inquiry-primarily based totally gaining knowledge of or college students and the received outcomes also can be utilized in training. The measurements could be completed the usage of devices which could acquire and sign-up statistics regarding a few bodily parameters of the inanimate surroundings.

In addition to environmental studies, in addition desires of the measurements are to offer a massive wide variety of actual-time statistics to assist studies-primarily based totally gaining knowledge of and to make those statistics to be had at the Internet. During my research and at some point, of this studies length a technical-conversation revolution passed off withinside the international.

The use of smartphones has become a part of each day lives and were given especially famous with college students. These gadgets are, in my revel in, best for area use, dedication of location, statistics series, image, movie and sound recording and sharing the accumulated statistics over the Internet. I set as my intention the exam of the viable use of cellular telecall smartphone programs in area training and to increase a task for digital recording of the parameters of herbal surroundings. It turned into additionally my intention that the organized digital questionnaires can be used as samples for comparable surveys.

Another intention of the paintings turned into to create a quiz display that promotes statistics collecting on the sphere and which explores the values of our surroundings. It meant to lessen the space among generations at the same time as promoted the gathering of statistics with cellular telephones.

My additional intention turned into the exam of the usability of cellular gadgets in public training. In order to realize extra approximately utilization of virtual gadgets, a web

questionnaire turned into created and a web survey turned into evaluated amongst number one and excessive college students.

The hypotheses of the studies

The European Union helps the packages for the renewal of technology training, the improvement of innovation and virtual competencies in colleges, the broader use and accessibility of open instructional aids. A paradigm shift is wanted withinside the methodological way of life of training. A new gaining knowledge of surroundings, interest primarily based totally strategies and new equipment have to play a first-rate position on this alternate.

The improvement of virtual era and the unfold of cellular telephones can facilitate this technique. It can create new opportunities, loose get right of entry to statistics and brief feedback. There are gadgets able to recording statistics, which may be used to acquire a massive wide variety of environmental statistics, and databases from those measurements can assist gaining knowledge of. There are loose utility suites that may be used at the Internet and

additionally on smartphones which could meet the particular wishes of area statistics series.

In addition, they may be able to amassing the specified statistics from more than one cellular telephone, more than one geography, and sharing them in a not unusual place database reachable at the Internet. Young people's hobby in cellular telephones, virtual media and social media may be exploited to lead them to privy to their herbal surroundings surrounding them.

A task may be created that encourages the commentary of nature and lively participation, which enables gaining knowledge of with the delight of discovery, which promotes statistics series with thrilling innovative recordings. Projects advanced on the idea of the Project of Nature's Calendar are appropriate for extending the services of the Thematic Project Weeks in public training and inspire the paintings withinside the new gaining knowledge of surroundings.

Application of cellular gadgets promotes area paintings withinside the realistic topics of the technology and surroundings trainer

schooling, unbiased paintings of college students, acquisition of direct revel in and the improvement of accountable conduct. The variety of particular gaining knowledge of business enterprise strategies that sell environmentally aware conduct may be increased with a unique surroundings and nature conservation contest, and the variety of particular gaining knowledge of equipment may be increased via way of means of amassing statistics the usage of smartphones and the net.

Access to the Internet and the data conversation offerings that enabled Internet get right of entry to have converted our life-style and habits. Internet utilization has end up an increasing number of not unusual place amongst college students, they may be spending maximum in their time at the Internet the usage of social media.

The situations for making use of the BYOD precept are given for college students. They have smartphones, the tool has end up tremendous in grades 5-8. All types of on-line conversation may be accessed thru programs advanced for cellular telephony. We may be in contact with others at anytime, anywhere, even if

traveling. Access of social media is in particular completed via way of means of cellular telephones.

Most programs on smartphones are serving network relations. Students who've been the usage of molecular telephones for an extended time have extra competencies in the usage of gaining knowledge of selling and different programs.

Students are much less acquainted with gaining knowledge of apps however they may be open for the usage of them. Teachers are much less acquainted with gaining knowledge of apps. The maximum famous gaining knowledge of programs are for language gaining knowledge of the understanding and use of those apps will increase with the wide variety of years spent in college.

For area measurements, clever telephones comprise sensors and it's also critical that statistics may be downloaded after a hit statistics series. The integrated sensors aren't recognized via way of means of maximum of the scholars and that they did now no longer use it consciously. A massive wide variety

of college students realize a few manners of moving statistics among the cellular telecall smartphone and the computer. In assist of virtual training, there are extensive variations relying on college students age, gender, and vicinity of home.

Methods of the studies

Literature search

Overview of the literature regarding the current disaster of technology training, worldwide comparative measurements and sustainability. Internet primarily based totally studies on cellular gadgets, programs, prolonged and digital reality. Examination of the literature associated with using cellular gadgets in training.

Document evaluation

Documents of the European Commission: "Education and Training 2010" Work Program, Documents of the Committee running on Key Competences. 2006/962 / EC advice on key competences for lifelong gaining knowledge of. Strategic Framework - Education and Training 2020. Open Learning Action Plan. Erasmus + software files.

Field tests

We completed microclimate measurements withinside the vineyards of Kőszeg Mountains, Kissomlyó and Somló collectively with the scholars. We investigated the impact of basalt and basalt helps. Data have been accumulated and analyzed for the partial eclipse of March 2015. Based on our measurements and digital statistics series we observed the technique of frost and its consequences on vineyards in April, 2016. We completed water high-satisfactory measurements on the sphere, environmental bodily measurements, water high-satisfactory investigations of springs, streams and rivers withinside the Kőszeg Mountains. In addition to environmental studies, in addition goal of the measurements turned into to offer a massive wide variety of actual-time statistics to assist inquiry-primarily based totally gaining knowledge of and to make those statistics to be had thru the Internet.

Data-survey

I completed a web survey regarding utilization of net and

cellular programs amongst number one and excessive-college college students. The intention of the net questionnaire turned into to survey the scholar's virtual competence in utilization of net and cellular programs. 806 college students finished the questionnaire. The responding 10-18 years antique college students belonged to a number one college in a small village, number one colleges in a small town, a number one college in a district center, a number one college withinside the Capital and a excessive-college withinside the Capital.

Results

The dissertation offers a top-level view of the demanding situations of training withinside the twenty first century primarily based totally at the literature and record evaluation. It outlines the primary issues and describes the main steps taken via way of means of the European Union and Hungary to deal with the issues. The modified instructional schooling wishes, the want for lifelong gaining knowledge of, the disaster in technology training, the demanding situations of exploding and proliferating Internet and cellular

telephones, and sustainability require a paradigm shift withinside the method way of life of training.

The new gaining knowledge of of surroundings, the interest-primarily based totally strategies and the brand-new equipment have to play a critical position on this shift. The improvement of virtual era and the unfold of cellular telephones can facilitate this technique. It can create new opportunities, loose get right of entry to statistics and brief feedback. The thesis introduces a chain of measurements focused on particular environmental issues, which thru the dimension of environmental parameters and thru the advent of a database from the measured environmental statistics can sell inquiry-primarily based totally gaining knowledge of. These measurements also are accurate examples of studies completed collectively with college students and using dimension statistics in training.

Climate measurements in vineyards constitute a long-time period collection of measurements, the wide variety of measurements are extra than four million. The database is to be had at the Internet. The Nature Calendar task, which turned

into finished and examined in numerous areas, proved to be appropriate for the digital recording of herbal surroundings values. The task may be tailored and used for the coaching of any medium or excessive-degree difficulty regarding area measurements for the improvement of environmental consciousness and competence. Use of cellular gadgets sell area paintings, unbiased interest of college students, direct acquisition of revel in and consequently the improvement of accountable conduct withinside the coaching of the realistic topics of Sciences and Environment trainer schooling.

A survey, carried out withinside the framework of the studies, investigated the viable use of cellular gadgets in public training. 806 college students finished the net questionnaire regarding with using virtual gadgets. Based at the evaluation of the solutions, it could be said that the situations for making use of the BYOD precept supported via way of means of the Digital Educational Strategy are given for the scholars participated withinside the survey.

According to the survey, almost 93% of the 10-18 years antique college students have clever telephones and 3 quarters of them are on line each day. Students are extra like passive purchasers than content material creators. Students, who have been the usage of the telephones for an extended time, have extra competencies in the usage of gaining knowledge of and different programs. Students are much less acquainted with gaining knowledge of apps however are open for them, maximum gaining knowledge of apps are used for language gaining knowledge of. More than 80% of respondents realize a few manners of replacing statistics among the cellular telecall smartphone and the computer, this makes statistics series withinside the area viable. Most college students do now no longer realize the sensors constructed withinside the telephones and did now no longer consciously use it.

The outcomes display that the distribution of solutions assisting and opposing virtual training: now no longer range withinside the vicinity of residence, relies upon at the kind of college, a decrease share of secondary college students helps virtual training than number one college children.

Students commonly assist virtual training. More than thirds of all college students could assist virtual training. The ladies assist the deliberate alternate in a mile much less share than the boys. Support relies upon at the frequency of the usage of the Internet and using virtual games: who play extra frequently at the cellular telecall smartphone helps "virtual training" in a better extent.

Discussion

The European Union helps some of worldwide cooperative packages geared toward renewing training. Natural technology training is supported via way of means of the Science on Stage task and the Scientia software while the eTwinning software helps the collaboration of the European colleges with the assist of ICT. The Erasmus + software targets to increase key competences and competencies withinside the area of training.

The Open Educational Initiative targets to sell the broader use and accessibility of open instructional substances to disseminate innovation and virtual competencies. For the renewal of public training and for the fulfillment

of training in sustainability a paradigm shift is needed withinside the methodological way of life of training. In this shift the brand-new gaining knowledge of surroundings, interest-primarily based totally strategies and new equipment have to play a critical position. The improvement of virtual era and the unfold of cellular telephones can facilitate this technique.

This can create new opportunities, loose get right of entry to statistics and brief feedback. Based at the tasks completed at some point of the studies, it could be concluded that the utility of virtual era contributes to the renewal of the methodological way of life. The collection of measurements advanced withinside the framework of the dissertation helps task paintings and inquiry-primarily based totally gaining knowledge of. Based at the programmable registration equipment a database may be created containing a massive wide variety of environmental statistics.

These measurements are accurate examples of studies completed collectively with college students and using dimension statistics in training. Climate

measurements in vineyards constitute a long-time period collection of measurements generating huge quantities of statistics, the wide variety of measurements is over four million. The Ecolect utility suite, that's capable of meet the particular wishes of area statistics series, includes a web-reachable component and a utility that may be used on a telecall smartphone.

An on-line shape containing questions that can be wished for a statistics series assignment may be created on line. The digital shape may be downloaded with a utility mounted at the cellular telecall smartphone and statistics series responsibilities may be completed on the sphere. The utility is able to amassing the specified statistics from more than one cellular telephone, more than one geography, and percentage them in a not unusual place database to be had at the Internet.

Young people's hobby in cellular telephones, virtual media and social media may be exploited to lead them to privy to their surroundings and the encircling nature. The Nature Calendar task, advanced and examined withinside the framework of the dissertation, offers a version for

the digital recording of the herbal surroundings values, commentary of nature, sell lively participation, increase understanding with the pleasure of discovery and assist statistics series with playful innovative recording.

The task may be tailored and used withinside the coaching of any medium or better-degree difficulty which includes investigations withinside the area for the improvement of environmental consciousness and competence. Projects advanced on the idea of the Nature Calendar task are appropriate for the growth of the services of the sustainability-environmental consciousness week and the virtual topic week software. Application of cellular gadgets helps the paintings withinside the area, the unbiased paintings of college students, the purchase of direct revel in and consequently the improvement of accountable conduct. There are accurate usable telecall smartphone programs from measuring bodily parameters thru category to area orientation.

Electronic series of statistics is beneficial in area paintings and paperwork created for this reason may

be used for the fieldwork report. Students are capable of software the paperwork required for digital statistics series independently and use the paperwork to finish the gathering of statistics. The variety of particular gaining knowledge of business enterprise strategies that sell environmentally aware conduct may be increased with a unique surroundings and nature conservation contest, and the variety of particular gaining knowledge of business enterprise equipment may be increased via way of means of amassing statistics via way of means of telecall smartphone and thru the net.

The virtual task called "To Save as Treasure", which includes the protection of herbal and cultural values, contributes drastically to linking generations, spotting values and appreciating the paintings of the predecessors. Internet utilization have become an increasing number of not unusual place amongst college students finished the survey; they spend maximum in their time at the Internet the usage of social media.

The situations for making use of the BYOD precept are given for the scholars. They have smartphones,

the tool has end up tremendous in grades 5-8. The tremendous majority of smartphones use Android as OS. The social media is in particular accessed via way of means of cellular telephones. Most programs used on smartphones are related to upkeep of network relationships. Students withinside the survey who've been the usage of molecular telephones for an extended time have extra competencies in the usage of gaining knowledge of and different programs.

Students are much less acquainted with gaining knowledge of apps however are open for the usage of them. The maximum famous gaining knowledge of programs are for language schooling. Their understanding and use growth with the wide variety of years spent in college. Most college students do now no longer realize the sensors mounted withinside the smartphones and did now no longer consciously use it. Most of the scholars realize a few manners of moving statistics among the cellular telecall smartphone and the computer.

There are extensive variations in assist of virtual training relying at the age of the scholars, their sex, and vicinity of residence. Students choose

virtual training; majority will assist it. High-college college students assist virtual training much less than number one college pupils. The ladies assist the deliberate alternate a way much less than the boys.

The survey statistics do now no longer display any variations withinside the vicinity of residence. Support for virtual training relies upon on whether or not or now no longer the telecall smartphone is used to play – college students play extra frequently at the cellular choose "virtual training" extra.

Conclusion

According to the Digital Educational Strategy: "Digital equipment and techniques should be incorporated into lecture rooms as they may be incorporated increasingly more into our regular life. For this, however, it's miles essential to alternate the attitudes of social thinking". The realistic programs defined on this dissertation may be the primary steps closer to this alternate. On this investigation, I concluded the followings:

In technology and surroundings trainer schooling, extra

interest has to be paid to IT equipment, specially to using smartphones which are beneficial in area research.

In the sphere of public training, withinside the coaching of technology and herbal sciences the implementation of studies-primarily based totally gaining knowledge of have to obtain precedence and the toolkit of methodological way of life have to be increased with using smartphones and tablets.

It is critical that the extension of the equipment of the coaching and gaining knowledge of technique have to be completed ideally withinside the case of non-curricular activities (School days, Thematic days, celebrated days, topic week) and out-of-college opportunities (nature colleges, area practice, thematic camps, advent of instructional paths), due to the fact on those activities it offers concrete actual studies for the improvement of accountable, environmentally aware conduct.

In trainer schooling method way of life and realistic displays have to be in focus, on the way to gift the applied responsibilities and their outcomes. I locate it essential to

amplify the modern gadget of examine competitions and contests, and I suggest to create boards that, further to number one college pupils, contain college students of vocational colleges, excessive-colleges and gyms and inspire and increase their participants.

This is supported via way of means of the release of a unique surroundings and nature safety contest that practice statistics series with smartphones and net. I conclude its critical that, on the idea of the outcomes provided withinside the dissertation, we have to amplify the above-stated proposals to the territory of Hungary and the Carpathian Basin.

Refence

- 1) Szőlőklíma mérések és „Szőlő Elektronikus Kalendárium” bemutatása Légiör: az országos meteorológiai intézet szakmai tájékoztatója 61:(4*2016) pp. 142-146. (2017)
- 2) Németh László Vízvizsgálatok, környezetfizikai mérések a terepen, elektronikus adatgyűjtés Fókusz - vajdasági ismeretterjesztő és tudományszerűsítő elektronikus folyóirat 141.: Paper 141. szám. 9 p. (2016)
- 3) Németh László, Béres Csilla

Terepi mérések a környezeti oktatásban. Nyugat-Magyarországi Egyetem Savaria Egyetemi Központ Tudományos Közleményei 21: (Természettudományok 16.) pp. 103-114. (2016)

4) Németh László, Kovátsné Németh Mária, Béres Csilla a Természet Kalendárium projekt Tanulmánykötet a 7. BBK előadásából. 1-2. kötet. 1159 p. Konferencia helye, ideje: Budapest, Magyarország, 2016.05.19-20. Budapest: Óbudai Egyetem, Bánki Donát Gépész és Biztonságtechnikai Mérnöki Kar, pp. 99-110. (ISBN:978-615-5460-97-5)

5) Németh L, Zentai Z, Puskás J, Szőlő Elektronikus Kalendárium. 8. Szőlő és Klíma Konferencia. Konferencia helye, ideje: Kőszeg, Magyarország, 2016.04.16 Kőszegi Várszínházért Alapítvány, 2016. pp. 9-10.

6) a pedagógusképzés fejlesztésében Nyugat-Dunántúlon. 344 p. Szombathely: Nyugat-magyarországi Egyetem Regionális Pedagógiai Szolgáltató és Kutató Központ, 2015. pp. 305-320. (ISBN:978-963-359-054-6)

7) Németh László, Béres Csilla, Terepi mérések szerepe a környezettan- és természetismeret-környezettan tanárképzésben. In: Kováts-Németh Mária, Bodáné Kendrovics Rita (szerk.) A környezetpedagógia elmélete és gyakorlata. 282 p. Győr: Palatia Kiadó, 2015. pp. 169-183. (ISBN:978-963-7692-64-2)

8) Németh László, Béres Csilla,
Terepi mérések szerepe a környezeti
oktatásban. XIV. Természet-, Műszaki
és Gazdaság tudományok Alkalmazása
Nemzetközi Konferencia: Az
előadások összefoglalói. Szombathely,
Magyarország, 2015.05.16: NYME,