

Chapter 1 : 3 New Teaching Methods Improve the Educational Process

New crops and techniques. New crops and techniques are, in reality, modifications of the old. Soybeans, sugar beets, and grain sorghums, for example, all regarded as "new" crops, are new only in the sense that they are now grown in wider areas and have different uses from those of earlier times.

Bring fact-checked results to the top of your browser search. New techniques As the development of the sugar beet shows, new techniques may bring particular crops into prominence. This discussion, however, is confined to three that, in some forms, are old yet today are transforming agriculture in many parts of the world. Terracing Terracing, which is basically grading steep land, such as hillsides, into a series of level benches, was known in antiquity and was practiced thousands of years ago in such divergent areas as the Philippines, Peru, and Central Africa. Today, terracing is of major importance in Japan, Mexico, and parts of the United States, while many other countries, including Israel, Australia, South Africa, Colombia, and Brazil, are increasing productivity through the inauguration of this and other soil-conserving practices. Colombia provides an example of the modern need for terracing. For many years, the steep slopes used for producing the world-renowned Colombian coffee have been slowly eroding. During the s, experimental work showed that contour planting and terracing would help preserve the land. Since then, the program has become a full conservation service. Irrigation The usefulness of a full-scale conservation project is seen in the Snowy Mountains Scheme of Australia 1974, where three river systems were diverted to convert hundreds of miles of arid but fertile plains to productive land. Intensive soil conservation methods were undertaken wherever the natural vegetation and soil surface had been disturbed. Drainage is controlled by stone and steel drains, grassed waterways, absorption and contour terraces, and settling ponds. Steep slopes are stabilized by woven wickerwork fences, brush matting, and bitumen sprays, followed by revegetation with white clover and willow and poplar trees. Grazing is strictly controlled to prevent silting of the reservoirs and damage to slopes. The two main products of the plan are power for new industries and irrigation water for agriculture, with recreation and a tourist industry as important by-products. The simplest method of irrigation was to dip water from a well or spring and pour it on the land. Many types of buckets, ropes, and, later, pulleys were employed. The ancient shadoof, which consists of a long pole pivoted from a beam that has a weight at one end to lift a full bucket of water at the other, is still in use. Conduction of water through ditches from streams was practiced widely in Southwest Asia, in Africa, and in the Americas, where ancient canal systems can be seen. A conduit the Romans built 2, years ago to provide a water supply to Tunis is still in use. Sufficient water at the proper time makes possible the full use of technology in farming—including the proper application of fertilizers, suitable crop rotations, and the use of more productive varieties of crops. Expanding irrigation is an absolute necessity to extend crop acreage in significant amounts; it may be the most productive of possible improvements on present cropland. First, there is the possibility of making wider use of irrigation in districts that already have a high rate of output. Second, there is the possibility of irrigating nonproductive land, especially in arid zones. The greatest immediate economic returns might well come from irrigating productive districts, but irrigation of arid zones has a larger long-range appeal. Most of the arid zones, occupying more than one-third of the landmass of the globe, are in the tropics. Generally, they are rich in solar energy, and their soils are rich in nutrients, but they lack water. Supplemental irrigation in the United States, used primarily to make up for poor distribution of rainfall during the growing season, has increased substantially since the late s. This irrigation is carried on in the humid areas of the United States almost exclusively with sprinkler systems. The water is conveyed in pipes, usually laid on the surface of the field, and the soil acts as a storage reservoir. The water itself is pumped from a stream, lake, well, or reservoir. American farmers first used sprinkler irrigation about 1880, but the development of lightweight aluminum pipe with quick couplers meant that the pipe could be moved easily and quickly from one location to another, resulting in a notable increase in the use of sprinklers after World War II. India, where irrigation has been practiced since ancient times, illustrates some of the problems. Both large dams, with canals to distribute the water, and small tube, or driven, wells, made by driving a pipe into water or water-bearing sand, controlled by individual farmers, have been used. Some have

been affected by salinity, however, as water containing dissolved salts has been allowed to evaporate in the field. Tube wells have helped in these instances by lowering the water table and by providing sufficient water to flush away the salts. The other major problem has been to persuade Indian farmers to level their lands and build the small canals needed to carry the water over the farms. In arid areas such as the U. Southwest, tapping subterranean water supplies has resulted in a lowered water table and, in some instances, land subsidence. Dry farming The problem of educating farmers to make effective use of irrigation water is found in many areas. An even greater educational effort is required for dry farming ; that is, crop production without irrigation where annual precipitation is less than 20 inches 50 cm. Dry farming as a system of agriculture was developed in the Great Plains of the United States early in the 20th century. It depended on the efficient storage of the limited moisture in the soil and the selection of crops and growing methods that made best use of this moisture. The system included deep fall plowing, subsurface packing of the soil, thorough cultivation both before and after seeding, light seeding, and alternating-summer fallow, with the land tilled during the season of fallow as well as in crop years. In certain latitudes stubble was left in the fields after harvest to trap snow. Though none of the steps were novel, their systematic combination was new. Systematic dry farming has continued, with substantial modifications, in the Great Plains of Canada and the United States, in Brazil , in South Africa , in Australia , and elsewhere. The direction of change While no truly new crop has been developed in modern times, new uses and new methods of cultivation of known plants may be regarded as new crops. For example, subsistence and special-use plants, such as the members of the genus *Atriplex* that are salt-tolerant, have the potential for being developed into new crops. New techniques, too, are the elaboration and systematization of practices from the past.

Chapter 2 : The Roman dead: new techniques are revealing just how diverse Roman Britain was

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As technology and socioeconomic trends change, so will our means of gaining customer insights. In any case, here are a sampling of some of the new market research trends and techniques popular now, in no particular order: A shift from data collection to data analysis: Today, actual customer behavior data is collected with ease, to the point where analysis or data mining is much more challenging than obtaining the data. All of this information can be used to fine tune a website to the audience. Jonathan Harris performed a great TED talk that beautifully demonstrates how readily available data can be visualized. If you wanted to know what color cereal box would sell the most cereal, would you rather base your decision on a survey or an actual experiment where colors are tested? Of course the experiment would be more valuable. The data is much more reliable. Mobile market research methods: Smart phones and tablets are taking the world by storm. These devices are becoming a preferred platform for many applications and markets, including market research. Examples of how these devices are being used in market research include: Smartphone designed surveys – Good mobile surveys are ones designed specifically for the smartphone form factor. These surveys can be web-based, optimized for phones, or they can be native applications built specifically for iOS, Android, or Windows mobile operating systems. Location Awareness – Advanced phone market research techniques can leverage smartphone location GPS information to trigger questions or simply track movement over time. For example, you can imagine a survey question that only appears when the phone knows the user is at the gas station. Biometric Market Research Techniques: Examples of biometric market research methods include heart rate monitoring, respiration monitoring, skin and muscle activity, brain activity using functional MRI and eye tracking. A good article on the subject can be found here. Campbell Soup has used such methods in their market research. An example of biometric market research Eye Tracking Heat Map: Another Example of Biometric Market Research 5. Participants can buy and sell their stake in a candidate along the way. The beauty of these prediction markets is that they tend to be good indications of reality. So what does this have to do with market research? Well, forward thinking companies are setting up these prediction markets to tap into the wisdom of their employees. For example, a company could ask employees to bid on a prediction market that has to do with competitors, industry trends, or the success of product concepts in order to get an early read on those ideas. If this is still foggy, check out intrade , a public prediction market. Consensus Point makes business to business software that has been used by companies like Best Buy. Once again, the idea is to replicate a real situation for research subjects and observe behavior, as opposed to asking them what they think they will do. In conferences or lectures, presenters often have difficulty engaging with the audience. One tool to remedy this problem is live audience response systems. These systems involve a handheld remote control for audience members to respond to questions that appear on-screen usually in a PowerPoint slide. You can imagine the applications for this: They also allow researchers to gather people from broader geographies much easier. Social Media Market Research: Social media dominates the Web, so it is natural that market researchers are looking for ways to leverage this technology. Research of social media – Simply researching the market of social media. Research using social media as part of the methodology or delivery mechanism – Many companies have a large following on social media sites and can leverage that audience to ask questions. What a gold mine for companies to have instant access to their highly loyal and interested customers for market research purposes. A good example of using social media to conduct market research is GoPollGo , a twitter polling company. This overlaps with mobile phone market research. A poster could ask a simple survey question and provide two QR codes, asking people to scan their choice. Such an approach makes it very easy for someone to take a one-question survey without doing much more than pointing a phone. A webmaster would then be able to gather the response data in aggregate. Other companies are using QR codes as a simple launch point to a mobile survey. A good example of this is Tiipz. QR Codes There you

have itâ€™an overview of new market research methods and techniques. This article will continue to evolve and update over time as new research methodologies and technologies emerge. I hope this was informative. If you have other examples of new market research, or if you have anything to add, please do so in the comments below.

New Techniques Hello there - I am still among the living, but still dealing with my cold and The Cough That Will Never End. Not that it surprises me, since anytime I get sick and it involves a cough, I know that part will be around for the long haul.

History of genetic engineering Many different discoveries and advancements lead to the development of genetic engineering. Human-directed genetic manipulation began with the domestication of plants and animals through artificial selection in about 12,000 BC. Hybridization was one way rapid changes in an organisms makeup could be introduced. Hybridization most likely first occurred when humans first grew similar, yet slightly different plants in close proximity. Frederick Sanger developed a method for sequencing DNA in 1958, greatly increasing the genetic information available to researchers. After discovering the existence and properties of DNA, tools had to be developed that allowed it to be manipulated. Plasmids, discovered in 1952, became important tools for transferring information between cells and replicating DNA sequences. Polymerase chain reaction PCR, developed by Kary Mullis in 1983, allowed small sections of DNA to be amplified replicated and aided identification and isolation of genetic material. Artificial competence was induced in *Escherichia coli* in 1970 by treating them with calcium chloride solution CaCl_2 . In the early 1980s it was found that this bacteria inserted its DNA into plants using a Ti plasmid. This is driven by the goal for the resultant organism. In some cases only one or two genes are affected. For more complex objectives entire biosynthetic pathways involving multiple genes may be involved. Once found genes and other genetic information from a wide range of organisms can be inserted into bacteria for storage and modification, creating genetically modified bacteria in the process. Once a gene is isolated it can be stored inside the bacteria providing an unlimited supply for research. A simple screen involves randomly mutating DNA with chemicals or radiation and then selecting those that display the desired trait. For organisms where mutation is not practical, scientist instead look for individuals among the population who present the characteristic through naturally-occurring mutations. Processes that look at a phenotype and then try and identify the gene responsible are called forward genetics. The gene then needs to be mapped by comparing the inheritance of the phenotype with known genetic markers. Genes that are close together are likely to be inherited together. This approach involves targeting a specific gene with a mutation and then observing what phenotype develops. Conditional mutations are useful for identifying genes that are normally lethal if non-functional. Due to these insecticidal properties the bacteria was used as a biological insecticide, developed commercially in 1986. The cry proteins were discovered to provide the insecticidal activity in 1987 and by the 1990s scientists had successfully cloned the gene that codes for this protein and expressed it in plants. Traditionally DNA was isolated from the cells of organisms. Once isolated, additional genetic elements are added to the gene to allow it to be expressed in the host organism and to aid selection. Extraction from cells[edit] Main article: The methods used vary depending on the type of cell. Once open, the DNA must be separated from the other cellular components. A ruptured cell contains proteins and other cell debris. This aqueous phase can be removed and further purified if necessary by repeating the phenol-chloroform steps. The nucleic acids can then be precipitated from the aqueous solution using ethanol or isopropanol. Any RNA can be removed by adding a ribonuclease that will degrade it. Many companies now sell kits that simplify the process. If the sequence is not known then a common method is to break the DNA up with a random digestion method. This is usually accomplished using restriction enzymes enzymes that cut DNA. A partial restriction digest cuts only some of the restriction sites, resulting in overlapping DNA fragment segments. The DNA fragments are put into individual plasmid vectors and grown inside bacteria. Once in the bacteria the plasmid is copied as the bacteria divides. To determine if a useful gene is present on a particular fragment the DNA library is screened for the desired phenotype. If the phenotype is detected then it is possible that the bacteria contains the target gene. If the gene does not have a detectable phenotype or a DNA library does not contain the correct gene, other methods must be used to isolate it. If the position of the gene can be determined using molecular markers then chromosome walking is one way to isolate the correct DNA fragment. If the gene expresses close homology to a known gene in another species, then it could be

isolated by searching for genes in the library that closely match the known gene. Gel electrophoresis then sorts the fragments according to length. A marker with fragments of known lengths can be laid alongside the DNA to estimate the size of each band. The DNA band at the correct size should contain the gene, where it can be excised from the gel. Its effectiveness drops with larger genes and it has the potential to introduce errors into the sequence. It is possible to artificially synthesise genes. The gene can be modified at this stage for better expression or effectiveness. As well as the gene to be inserted most constructs contain a promoter and terminator region as well as a selectable marker gene. The promoter region initiates transcription of the gene and can be used to control the location and level of gene expression, while the terminator region ends transcription. A selectable marker, which in most cases confers antibiotic resistance to the organism it is expressed in, is used to determine which cells are transformed with the new gene. The constructs are made using recombinant DNA techniques, such as restriction digests, ligations and molecular cloning.

Gene delivery Once the gene is constructed it must be stably integrated into the target organisms genome or exist as extrachromosomal DNA. There are a number of techniques available for inserting the gene into the host genome and they vary depending on the type of organism targeted. If the transgene is incorporated into somatic cells, the transgene can not be inherited.

Transformation genetics Bacterial transformation involves moving a gene from one bacteria to another. It is integrated into the recipients plasmid. Transformation is the direct alteration of a cells genetic components by passing the genetic material through the cell membrane. Typically the cells are incubated in a solution containing divalent cations often calcium chloride under cold conditions, before being exposed to a heat pulse heat shock. Calcium chloride partially disrupts the cell membrane, which allows the recombinant DNA to enter the host cell. It is suggested that exposing the cells to divalent cations in cold condition may change or weaken the cell surface structure, making it more permeable to DNA. The heat-pulse is thought to create a thermal imbalance across the cell membrane, which forces the DNA to enter the cells through either cell pores or the damaged cell wall. Electroporation is another method of promoting competence. A gene gun uses biolistics to insert DNA into plant tissue. The bacteria will attach to many of the plant cells exposed by the cuts. The plasmid T-DNA is integrated semi-randomly into the genome of the host cell. The only essential parts of the T-DNA are its two small 25 base pair border repeats, at least one of which is needed for plant transformation. An alternative method is agroinfiltration. This method can be used on plants that are not susceptible to *Agrobacterium* infection and also allows transformation of plant plastids. Plants cells can also be transformed using electroporation, which uses an electric shock to make the cell membrane permeable to plasmid DNA. Due to the damage caused to the cells and DNA the transformation efficiency of biolistics and electroporation is lower than agrobacterial transformation.

Transfection Transformation has a different meaning in relation to animals, indicating progression to a cancerous state, so the process used to insert foreign DNA into animal cells is usually called transfection. Often these cells are stem cells that are used for gene therapy. Chemical based methods uses natural or synthetic compounds to form particles that facilitate the transfer of genes into cells. The solution, along with the DNA, is encapsulated by the cells and a small amount of DNA can be integrated into the genome. Other techniques include using electroporation and biolistics. When the pronuclei from the sperm head and egg are visible through the protoplasm the genetic material is injected into one of them. The oocyte is then implanted in the oviduct of a pseudopregnant animal. The gene is transfected into embryonic stem cells and then they are inserted into mouse blastocysts that are then implanted into foster mothers. The resulting offspring are chimeric, and further mating can produce mice fully transgenic with the gene of interest.

Transduction genetics Transduction is the process by which foreign DNA is introduced into a cell by a virus or viral vector. The sequences that allow the virus to insert the genes into the host organism must be left intact. Popular virus vectors are developed from retroviruses or adenoviruses. Other viruses used as vectors include, lentiviruses, pox viruses and herpes viruses. The type of virus used will depend on the cells targeted and whether the DNA is to be altered permanently or temporarily.

Regeneration [edit] As often only a single cell is transformed with genetic material, the organism must be regenerated from that single cell. In plants this is accomplished through the use of tissue culture. If successful, the technique produces an adult plant that contains the transgene in every cell. All offspring from the first generation are heterozygous for the inserted gene and must be inbred to

produce a homozygous specimen. Selectable markers are used to easily differentiate transformed from untransformed cells. Cells that have been successfully transformed with the DNA contain the marker gene, while those not transformed will not. By growing the cells in the presence of an antibiotic or chemical that selects or marks the cells expressing that gene, it is possible to separate modified from unmodified cells. Another screening method involves a DNA probe that sticks only to the inserted gene. These markers are usually present in the transgenic organism, although a number of strategies have been developed that can remove the selectable marker from the mature transgenic plant. Once confirmed methods that look for and measure the gene products RNA and protein are also used to assess gene expression, transcription, RNA processing patterns and expression and localization of protein products. Gene targeting and Genome editing Traditional methods of genetic engineering generally inserts the new genetic material randomly within the host genome. This can impair or alter other genes within the organism.

While traditional market research techniques such as surveys and focus groups are still widely used, there are many new market research methods and techniques to spice things up.

Here are five of the best sales techniques that really work, as well as five classic go-to selling techniques that may, in fact, be hurting your sales efforts. Selling Techniques that Work 1. Challenging the Status Quo Most salespeople see the sales process as a linear process. At some point, it has an end – the prospect will choose either you or your competitor. The truth is that those are not the only two end points. Finding Your Value Wedge How much overlap is there between what you can provide to your prospects and what your competition can provide? Most B2B salespeople admit that overlap is 70 percent or higher. Learn more about how to define your value proposition. Often the best way to do that is to talk about the people who were affected by the challenging environment they were working in. Then talk about how their lives became better, easier, more fun, or less stressful after using your solution. Making the Customer the Hero Every story has a hero. Who is the hero of your story? If the answer is yes, then you need to rework your story – and make the customer the hero. The customer is the one who needs to save the day, not you. Your role is that of the mentor. You are there to help your customers see what has changed in their world and how they can adapt and better survive and thrive. Using 3D Props There are many ways to tell a story. Props make a metaphor or analogy tangible. Selling Benefits Everyone knows you need to sell benefits not features, right? Remember that 20 to 60 percent of pipeline deals are lost to the status quo. Marketing to Personas Many marketers use personas to develop messaging. The problem is that personas are typically defined by who the prospect is – demographics and behaviors. So instead of spending time refining your elevator pitch, focus on building the story that features your customer as the hero see Selling Techniques That Work 4. Delivering PowerPoint Presentations The PowerPoint presentation has become the de facto go-to approach for sales meetings. Marketing churns out slides, then salespeople turn out the lights and rely on logo slides, bullet points, and animations to do the selling for them.

Chapter 5 : My Market Research Methods - New Market Research Methods and Techniques

New breeding techniques (NBTs) are new methods of genetic engineering that give scientists the ability to more precisely genetically modify crops and animals. Using NBTs, researchers can enhance or silence or insert or remove desired traits.

Messenger Our knowledge about the people who lived in Roman Britain has undergone a sea change over the past decade. New research has rubbished our perception of it as a region inhabited solely by white Europeans. Roman Britain was actually a highly multicultural society which included newcomers and locals with black African ancestry and dual heritage, as well as people from the Middle East. For the most part, these findings have been welcomed by public, and incorporated by museums into displays and educational content. But, post-Brexit referendum and in an atmosphere of growing nationalism, they have also been rejected and ridiculed. The research behind this dramatic change in our understanding comes from my field of bioarchaeology, a sub-field of archaeology which focuses on the study of human remains using a variety of techniques drawn from osteology and forensics. Who exactly are the Roman dead? We also use new techniques in analysing ancient DNA to understand aspects of their physical appearance, diseases and population affiliation. Mary Beard is right, Roman Britain was multi-ethnic “ so why does this upset people so much? People vs objects History is always subject to bias “ what kind of bias and the scale of it just depends on the sources of evidence. One important source of information about the movement of people in the Roman period are inscriptions, particularly from tombstones. These show that people had come to Britain from the Mediterranean, France and Germany. But this heavily skews our understanding towards men, people with a military connection, and elites. But skeletons provide a unique perspective on the society and environment in which a person lived. These factors shaped their health, and bones and teeth retain this evidence, revealing information such as where they spent their early childhood. These are datasets which are therefore independent of many sources of bias. Bioarchaeological studies of Roman-period skeletons have really challenged knowledge based upon traditional sources of archaeological evidence. Take evidence from material culture, such as jewellery. In the past, when items with a continental origin were found in a burial, all too often a direct connection was made between the origin of these items and the person laid to rest. Take the unique burial of a year-old girl in Southwark London , whose grave goods included glassware and a carved ivory clasp knife in the shape of a leopard, rare items with connections to the wider empire. Examples of Roman grave goods. But intriguingly, later forensic ancestry, stable isotope and aDNA analyses revealed that she grew up in the southern Mediterranean and then spent at least the last four years of her life in London. She had white European ancestry, blue eyes and the genetic group to which her maternal DNA belonged was HV6, which is found today in southern and eastern Europe. This case “ and there are many others like it “ demonstrates the importance of applying new scientific techniques to help solve these important archaeological questions. It also challenges a traditional overreliance on material culture to explore migration. Similar cases have been found elsewhere in Roman Britain, particularly at settlements with military garrisons. Informally established by traders and merchants around 48AD, five years after the Claudian invasion, Londinium soon became the heart of the Imperial administration for the territory. Unlike many others in Britain, the majority of excavated burials in London either have locally or British-made objects or else none are present wood and fabric rarely survive to discovery. And the few tombstones we have only survived because they were used to build the Medieval city wall. In this situation, where many hundreds of people remain anonymous in death, bioarchaeology is the only way to understand the nuances of this unique population. Many of these anonymous people included women and children who had travelled as free people or as slaves, from Italy and Germany, as well as the southern Mediterranean. These methods have enabled us to show that people with black African ancestry travelled to and were born in London throughout the Roman period. The skull of a woman buried in Southwark with curator Meriel Jeater. The evidence for Roman Britain having a diverse population only continues to grow. Bioarchaeology offers a unique and independent perspective, one based upon the people themselves.

Chapter 6 : Best Sales Techniques: 5 Selling Techniques That Work, 5 That Don't

Many of these teaching techniques are not actually new however! The use of technology in the classroom has simply given education a new lease of life allowing us to approach old ideas in new ways. Outlined below are some popular teaching techniques that have arisen from the integration of technology in education.

Greater student interaction is encouraged, the boundaries of authority are being broken down, and a focus on enjoyment over grades is emphasised. It puts a greater level of responsibility on creating lesson plans that truly work. Here are three teaching methods that are making an impact. Spaced Learning Teachers have reported amazing results when it came to spaced learning. Spaced Learning is a learning method in which the condensed learning content is repeated three times, with two minute breaks during which activities such as physical activities are performed by the students. I think, that PE and lessons can be combined. Spaced learning involves encouraging students to quickly switch through activities. For example, providing ten minutes of knowledge on the nervous system with a PowerPoint presentation and then having 15 minutes of basketball would be the way to get the better grades. The key is in the brain cells. It helps them to create the connections that they need to actually remember the knowledge. Furthermore, it has the additional benefit of allowing people to relax. The concept of Flexible Fridays is that an in-depth session of a subject can be acquired by simply having a whole day of mathematics or some other subject. Somebody repeats, somebody learns. It makes it more convenient for students as now they can focus on one thing while in school. Teachers also find it easier as they can keep their lesson plans and simply go over them again with a more personal touch. Flexible Friday lessons are more in-touch with students and gives focused study time that can help students grasp difficult concepts. Teachers are also able to aid students by simply having fast-track weeks. Having a whole week of mathematics or English can help students to get through the subjects in a shorter amount of time. Business studies are where this new focus of engagement occurred at the Leasowes Community College in Dudley. Instead of conventional teaching methods, students were taken to visit local businesses where they were able to witness how the knowledge that they were learning applied to the real world. Multiple days were set aside for this practice and all students were required to wear business suits in order to attend. The idea is to get students engaged and to connect their learning to the real world. If teachers can show them how what they are teaching connects to the real world then their own brain cells are going to connect them and associate them. The results are there for all to see because before this new method was introduced only 40 percent of students achieved grades of A-C across both years 10 and 11. Under the new teaching method the institution reported that the numbers had shot up to a massive 91 percent of students achieving A-Cs in years 10 and year 11. New methods of teaching have the purpose to improve the quality of education and involve students in educational process. Innovations mean a progress and development. Photo Courtesy of BigStock.

Chapter 7 : New Techniques Can Detect Lyme Disease Weeks Before Current Tests | Rutgers Today

New agricultural technologies present new challenges for assessing risks and tailoring risk management measures for those technologies. However, governments, particularly those that have invested taxpayer money to develop the technologies, may not adapt to meet those challenges. The U.S. and EU are.

Bring fact-checked results to the top of your browser search. New crops and techniques New crops and techniques are, in reality, modifications of the old. Such techniques as terracing , dry farming , and irrigation are nearly as old as the practice of agriculture itself, but their widespread application is still increasing productivity in many parts of the world. Displayed by permission of The Regents of the University of California. New crops The soybean This is an outstanding example of an ages-old crop that, because of the development of new processes to make its oil and meal more useful, is widely produced today. In the East, where the soybean originated long ago, more than half the crop is used directly for food , and less than a third is pressed for oil. Its high protein and fat content make it a staple in the diet, replacing or supplementing meat for millions of people. Though first reported grown in America in , the soybean remained a rare garden plant for nearly years. Around the beginning of the 20th century, when three new varieties were introduced from Japan , U. In the early s a soybean oil processing method that eliminated a disagreeable odour from the finished product was developed. World War II brought an increased demand for edible oil. The food industry began using soybean oil for margarine , shortening , salad oil, mayonnaise , and other food products and continues to be its chief user. Manufacturers of paints , varnishes , and other drying oil products are the most important nonfood users. Development of the solvent process of extracting soybean oil has greatly increased the yield. Soybean meal and cake are used chiefly for livestock feed in the United States. The high protein content of the meal has made it an attractive source of industrial protein, and, with proper processing, it is an excellent source of protein for humans. Development of new soybean varieties suited for different parts of the world is possible by means of hybridization and genetic modification. Hybridization permits isolating types that are superior in yielding ability, resistance to lodging breakage of the plant by wind and rain and shattering of the bean , adaptation to suit various requirements for maturity, and resistance to disease. Genetically modified soybeans are engineered to be resistant to glyphosate, a herbicide , and are among the most widely cultivated genetically modified organisms GMOs. Sorghum Just as the soybean was used for many centuries in Asia before its introduction into the Western world, so sorghum was a major crop in Africa. In India it is known as jowar, cholam, and great millet, and it is called gaoliang in China. In the United States it is often called milo, while the sweet-stemmed varieties are referred to as sweet sorghum or sorgo. Sorghum probably was domesticated in Ethiopia about 3, years ago. From there it spread to West and East Africa and then southward. Traders from Africa to the East carried sorghum as provisions on their dhows. It is likely that sorghum thus reached India, where cultivation began between 1, and 1, years ago. Other traders carried sorghum to China and the other countries of East Asia. The amber sorghums, or sorgos, useful for forage and syrup, may have moved by sea while the grain sorghums probably moved overland. The movement to the Mediterranean and Southwest Asia also began through traders. Sorghum reached the Americas through the slave trade. Guinea corn and chicken corn came from West Africa to America as provisions for the slaves. Other types were introduced into the United States by seedsmen and scientists from about to Seed was sometimes sold to farmers as a highly productive new variety of corn. It was not until the s, after the value of the plant as grain, forage, and silage for livestock feeding had been recognized, that acreage began to increase. Yields rose markedly in the late s, after successful hybridization of the crop. Better yields led in turn to increased acreage. Chinese amercane was brought from France to the United States in and was distributed to farmers. While the cane provided good forage for livestock, promoters of the new crop were most interested in refining sugar from the sorghum molasses, a goal that persisted for many years. While refining technology has been perfected, the present cost of sorghum sugar does not permit it to compete with sugar from other sources. Large amounts of sorghum grain are eaten every year by people of many countries. Most of the sorghum is ground into flour, often at home. Some is consumed as a whole-kernel food. Some of the grain is used for

brewing beer, particularly in Africa. The sugar beet The sugar beet as a crop is much newer than either soybeans or sorghum. Although beets had been a source of sweets among ancient Egyptians, Indians, Chinese, Greeks, and Romans, it was not until that a German apothecary, Andreas Marggraf , obtained sugar crystals from the beet. Some 50 years later Franz Karl Achard, son of a French refugee in Prussia and student of Marggraf, improved the Silesian stock beetâ€”probably a mangel-wurzelâ€”as a source of sugar. He erected the first pilot beet-sugar factory at Cunern, Silesia now in Poland , in Thus began the new use for sugar of a crop traditionally used as animal feed. When during the Napoleonic Wars continental Europe was cut off from West Indies cane sugar, further experimentation with beet sugar was stimulated. In a French scientist, Benjamin Delessert, used charcoal in clarification, which insured the technical success of beet sugar. On March 25, , Napoleon issued a decree that set aside 80, acres about 32, hectares of land for the production of beets, established six special sugar-beet schools to which select students were given scholarships, directed construction of 10 new factories, and appropriated substantial bounties to encourage the peasants to grow beets. By , 40 small factories were in operation in France , Belgium , Germany , and Austria. For the last third of the 19th century, beets replaced cane as the leading source of sugar. Since World War II , major changes have taken place in sugar-beet production in the United States and, to a lesser extent, in Germany and other countries with a substantial production. These changes may be illustrated by developments in the United States. Department of Agriculture undertook a cooperative study of the mechanization of sugar-beet growing and harvesting. The goal in harvesting was a combine that would perform all the harvesting operationsâ€”lifting from the soil , cutting the tops, and loadingâ€”in one trip down the row. By the end of World War II, four different types of harvesters were being manufactured. The spring and summer operationsâ€”planting, blocking cutting out all plants except for clumps standing 10 or 12 inches [25 or 30 centimetres] apart , thinning, and weedingâ€”did not yield so easily to mechanization, largely because the beet seed, a multigerm seedball, produced several seedlings, resulting in dense, clumpy, and somewhat irregular stands. In a machine for segmenting the seedball was developed. The problem was solved in , when a plant with a true single-germ seed was discovered in Oregon. Now precision seed drills could be used, and plants could be first blocked and then cultivated mechanically using a cross- cultivating techniqueâ€”i. During World War I ,

Chapter 8 : Technique | Definition of Technique by Merriam-Webster

Here are some of the newer dental care procedures and techniques that leading dentists are bringing into their practices. Improving Dental Health: How High-Tech X-Rays Can Help.

Give support and encouragement Provide knowledgeable feedback Apprenticeships. Apprenticeships give employers the opportunity to shape inexperienced workers to fit existing and future jobs. These programs give young workers the opportunity to learn a trade or profession and earn a modest income. Apprenticeship combines supervised training on the job with classroom instruction in a formal, structured program that can last for a year or more. Drilling is a good way for employees to practice skills. Evacuation drills are effective when training emergency preparedness, for example. Advantages Hands-on training methods are effective for training in new procedures and new equipment. They allow trainers to immediately determine whether a trainee has learned the new skill or procedure. Disadvantages They are not good for large groups if you do not have enough equipment or machines for everyone to use. Apprenticeship can be expensive for companies paying for employees who are being trained on the job and are not yet as productive as regular employees. Computer-Based Training CBT Computer-based training is becoming increasingly prevalent as technology becomes more widespread and easy to use. Though traditional forms of training are not likely to be replaced completely by technological solutions, they will most likely be enhanced by them. Human interaction will always remain a key component of workplace training. Nonetheless, it is a good idea to look more closely at what training technologies have to offer and how they might be used to supplement existing training programs or used when developing new ones. Computer-based training formats vary from the simplest text-only programs to highly sophisticated multimedia programs to virtual reality. Consider the following types: The simplest computer-based training programs offer self-paced training in a text-only format. These programs are similar to print-based, individualized training modules with the addition, in most cases, of interactive features. While simple in format, these programs can be highly effective and present complicated information and concepts in a comprehensible and easily accessible way. A wide variety of off-the-shelf training programs covering a broad range of workplace topics are available on CD-ROM. Programs can also be created by training consultants for the specific needs of the particular organization or individual departments. These training materials are an advanced form of computer-based training. They are much more sophisticated than the original text-only programs. Multimedia tends to be more provocative and challenging and, therefore, more stimulating to the adult mind. Although costs are higher than text-only software, the benefits in terms of employee learning may well be worth it. Multimedia training materials are typically found in DVD format. Virtual reality is three-dimensional and interactive, immersing the trainee in a learning experience. Most virtual reality training programs take the form of simulation, which is a highly effective form of training. It is hands-on experience without the risks of actual performance. Flight simulators, for example, have been used successfully for years to train airline and military pilots in critical flying skills, as well as to prepare them for emergency situations in a safe and forgiving environment. Advantages Computer-based training programs are easy to use. They can often be customized or custom designed. They are good for helping employees develop and practice new skills. They are useful for refresher training. They are applicable to self-directed learning. They can be cost-effective because the same equipment and program can be used by large numbers of employees. Computer-based programs are available 24 hours a day, 7 days a week. No matter which shift an employee works, training is always available. Some programs are interactive, requiring trainees to answer questions, make choices, and experience the consequences of those choices. This interaction generally results in greater comprehension and retention. They are uniform, which makes it possible to standardize training. When computers are used for training, it is possible to track what each employee has learned right on the computer. Most programs have post-tests to determine whether the employee has understood the training. Test scores give trainers statistics for training evaluations. Disadvantages These programs require trainees to be computer literate. They require trainees to have computer access. They are not the best choice for new or one-time training. Trainers need live interaction to ensure new skills or concepts are being communicated.

Trainees need to be able to ask questions and receive feedback. Online or E-Learning In addition to computer-based training, many companies with employees in a variety of locations across the country are relying on other technologies to deliver training. This method is becoming more and more popular as access to the Web becomes more widely available. There are many courses available on the Internet in many different topic areas. These courses provide a hands-on, interactive way for employees to work through training presentations that are similar to CD-ROM or PowerPoint, on their own. Training materials are standardized because all trainees will use the same program. Materials are also easy to update, so your training is always in step with your industry. These methods allow the trainer to be in one location and trainees to be scattered in several locations. Participants are networked into the central location and can usually ask questions of the trainer via the telephone or by a webchat feature. Lectures and demonstrations can be effective using this method. This method is similar to videoconferencing but involves audio only. Participants dial in at the scheduled meeting time and hear speakers present their training. Question and answer sessions are frequently held at the end of sessions in which participants can email questions or call in and talk to a presenter. Web meetings, or webinars. This method contains audio and visual components. Participants dial in to receive live audio training and also follow visual material that appears on their computer screens. Online colleges and universities. This method is also known as distance learning, and many schools now offer certificates or degrees through online programs that require only minimal on-campus residency. This method requires participants to be linked on the same network. It can be used with coaches and trainees to teach writing reports and technical documents. You can use e-mail to promote or enhance training. Send reminders for upcoming training. Conduct training evaluations through e-mail forms. Advantages Online or e-learning programs are effective for training across multiple locations. They save the company money on travel expenses. They can be a less expensive way to get training from expert industry professionals and consultants from outside the company. They are good for self-directed learning. They can be easy to update with new company policies or procedures, federal regulations, and compliance issues. They offer trainers a growing array of choices for matching training programs to employee knowledge and skill levels. Some employees may not like the impersonal nature of this training. Employees may be too intimidated by the technology or the remoteness of the trainer to ask questions. Lack of computer terminals or insufficient online time may restrict or preclude access to training. Inadequate or outdated hardware devices e. Self-instruction offers limited opportunities to receive context-specific expert advice or timely response to questions

How to Use a Blended Learning Approach

Blended learning is a commonsense concept that results in great learning success. In a nutshell, blended learning means using more than one training method to train on one subject. Here are several good reasons to use a blended learning approach: A University of Tennessee study showed that a blended learning program reduced both the time and the cost of training by more than 50 percent. The same study showed a 10 percent improved result in learning outcomes compared with traditional training. Learning experts believe that a big advantage of blended learning is that it more closely replicates how people actually learn on the job, through experience and interaction with co-workers. This approach works well because the variety of approaches keeps trainers and trainees engaged in training. Blended learning simply makes a lot of sense. Consider the many factors that affect training:

Chapter 9 : The Ravell'd Sleeve: New Techniques

The Most Effective Training Techniques There are numerous methods and materials with the most effective training techniques available to help you prepare and equip employees to better do their jobs. Indeed, with so many choices out there, it can be daunting to determine which methods to use and when to use them.

Posted on by Diego Santos Education, like almost every other area of our society, has evolved in leaps and bounds in recent years. A number of different teaching techniques have emerged due to this change in education. Outlined below are some popular teaching techniques that have arisen from the integration of technology in education.

Flipped Classroom Inverting your class: The Flipped Classroom Model basically involves encouraging students to prepare for the lesson before class. Thus, the class becomes a dynamic environment in which students elaborate on what they have already studied. Students prepare a topic at home so that the class the next day can be devoted to answering any questions they have about the topic. This allows students to go beyond their normal boundaries and explore their natural curiosity. Using GoConqr, you can easily share resources with a group, in this case a class, allowing students to study these resources from home and prepare for the next class.

Design Thinking Case Method: This technique is based on resolving real-life cases through group analysis, brainstorming, innovation and creative ideas. However, the Case Method prepares students for the real world and arouses their curiosity, analytical skills and creativity. This technique is often used in popular MBA or Masters classes to analyze real cases experienced by companies in the past.

Design Thinking for Educators also provides teachers with an online toolkit with instructions to explore Design Thinking in any classroom. [Click here to download the free toolkit now.](#) Curiosity is the main driver of learning. The key is to let students focus on exploring an area which interests them and learn about it for themselves. In a series of experiments in New Delhi, South Africa and Italy, the educational researcher Sugata Mitra gave children self-supervised access to the web. The results obtained could revolutionize how we think about teaching. A common technique for exploring self-learning is the use of Mind Maps. Teachers can create a central node on a Mind Map and allow students the freedom to expand and develop ideas. For example, if the focus is the Human Body, some students may create Mind Maps on the organs, Bones or Diseases that affect the human body. Later the students would be evaluated according to the Mind Maps they have created and could collaborate with each other to improve each others Mind Maps and come to a more comprehensive understanding of the Human Body. Want to implement these teaching techniques in your classroom? By using games, students learn without even realizing. It is also a very useful technique to keep students motivated. The teacher should design projects that are appropriate for their students, taking into account their age and knowledge, while making them attractive enough to provide extra motivation. Students can challenge their peers to test themselves and see who gets a higher score. In this way, students can enjoy the competition with peers while also having fun and learning. A variant of the previous section is to utilize social media in the classroom. Students today are always connected to their social network and so will need little motivation to get them engaged with social media in the classroom. The ways you can use teaching methods are quite varied as there are hundreds of social networks and possibilities.

Free Online Learning Tools: There is an array of free online learning tools available which teachers can use to encourage engagement, participation and a sense of fun into the classroom. As you can see, technology has created many teaching techniques that can help you connect better with your students. Have you had experiences with these teaching techniques? Comment below to share your experiences with others! This entry was posted in ExamTime Blog Posts and tagged education , teaching , teaching methods.