System Tools Design for Diseconomy and Collaborative Social Learning of Green Sustainable Technology Managements: Networking for Eco Design Project Construction for Food, Feed and Fuel from Wastes

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Abstract

The training, social learning and knowledge-based activities of our work has the aim at integrating the learners with situations and problems related to the small and mini enterprise product, energy and environment, with focus on pollution prevention with the use of sustainable technologies and industrial activities allowing them to act and provide solutions and projects, based on the innovative modern multimedia visual methods .In this work, we are making use of technological resources of social network available today much of the population. The system tools and methods include the use of computational tools for third-generation Web, design implementation of multimedia, collaborative online real-time implementation of reading practice, tests and exams in the home network via the Internet, use of online resources for video conference including sound, image and text, and use of social networking tools integrated with online search based on Google plus and SAP stream work. The complex system of Web server and programming language for database tools are all integrated as a platform following the philosophy of free software, open source, makes it the ideal environment for the development of system tools for bioenergy from wastes project. The experience we succeed to implement a hybrid system involving the several web servers, in cloud operating in conjunction with the   open source Wuala e digital Incubator Tidia as knowledge management. However also there is a need for Google plus and sap stream work integrated with Google apps as the tools of sharing multimedia content and dynamic database. In an interactive and integrated way the system tools are more flexible and more secure system. Collaborative Social learning of Green Sustainable Technology Managements, and Eco design Project construction for Food ,Feed and Fuel from wastes is made successfully passive buy building several blogs and internet sites with several system tools outlined.

Keywords: Development, bioenergy, networking tools integrated , Sustainable Technology Managements.

1.   Introduction

1.1 Learning system design for real time collaborative project planning and Project Design of sustainable technology developments

The first generation of environmental technologies typically involved additions to existing production systems that treated solid waste and effluents Generally the pollution burden was transferred from one location or medium to another, incurring additional treatment costs and doing nothing overall to reduce waste generation or raw material and energy consumption. The second generation of environmental technologies consisted of cleaner production systems which emphasize pollution prevention through reduced consumption of raw materials and energy and no or reduced waste generation, thereby increasing productivity and bringing environmental, financial and other benefits to the enterprise and the community. In this, end pipe, housekeeping work well done compared to cleaner production. In the third (current) generation of technologies and systems environmental performance considerations are fully integrated with economic and other operational issues and the system as a whole is sustainable. Sustainable production and consumption requires planning, design and management practices that facilitate innovative approaches to the reuse, remanufacturing and recycling of the limited amounts of "waste" that cannot be avoided.

The objective of this technical article is to describe the activities in the second part of this cooperation project with the Virtual Incubator - TIDIA and Sigaa /UFRN Superintendent of Informatics UFRN. Several system tools used to study the integration-oriented knowledge-based development and management of the project to produce biofuel and clean technology is described in this work

 UNEP and the UNESCO have developed a professional development workshop manual, teaching for a Sustainable World. It provides training modules to facilitate pre-service and in-service teacher education on curricular themes and learning experiences that promote education for sustainability. This resource and other online resource (1-4).

The increasing importance of global training approaches has been expedited by exponential growth in the availability of, and access to, information technologies. The growing dominance of content and delivery methods designed and marketed for a global audience contravenes the principle that environmental training and education must be needs-driven, relevant, and pedagogically sound. A myriad of other factors impact environmental practices, including the economic and political contexts. The efficacy of generic environmental education and training projects may be fatally flawed if participants in different cultures engage with the learning material when they have fundamentally different world views, philosophies, and understandings of the term "environment" and of the culture and perspectives on the environment held by others. Thus knowledge of the various perspectives on the environment, and an understanding of the cultural basis for their similarities and differences, are a prerequisite to achieving good learning outcomes when dealing with environmental topics.

Building and enhancing the capacity to plan and manage the environment in ways that produce sustainable outcomes involves regional and international cooperation to share best practice guidelines and technologies. Even when there is agreement at an international level to cooperate and overcome environmental problems, the translation of ideas into action by different communities can be modified by their cultural identity and context.

Environmental training and education have a special role in informing attitudes, building knowledge and strengthening motivation, especially of young people. The list of practical action and the few results obtained for the design and delivery of environmental education and training are proposed in

order to optimize the learning outcomes of generic environmental training and education initiatives using modern information technologies based on the   energy from waste for food and fuel production.

2.   Problems and issues related to online collaborative learning work

Our search group has been   working on this project for a long time applied research in the field of bioenergy and the environment on the development of innovative technologies aimed at cleaner production system, focusing on the development of innovation projects in biofuels such as biogas, bio ethanol, bio diesel and syngas related to agribusiness of fruit and fish. The first problem was to incubate and build content in the various projects of our researchers, the database that are dynamic and require much knowledge of digital network and related issues on the network of knowledge management various digital content, text, images, spreadsheets , videos and multimedia.

Another problem was one of our researchers have direct interaction with faculty advisers, seeking solutions to problems defined by community cooperatives and small businesses. Follow the task of designing, planning and implementing projects. We needed a collaborative, interactive management of technological innovation, allowing space for all researchers, students, teachers, coaches, managers and producers, making it viable and sustainable development of the collaborative project with the objective economic, ecological and social. The constant updating of technology innovation   required not only system tools a tool and platform for dynamic content management. After these two problems solved in two years, with the help of virtual-TIDIA incubator, the new problem identified was the management of human personnel needed related to help support of system and secure authentication for digital learning content from different database and dynamic interactive as well as the tools to access and space for all staff. Thus, group communication, knowledge-based collaboration to need a networking tool for capacity building and training (1-5).

3.   Interactive network integration: a solution of problems

With the support for our research group Virtual incubator for biofuel - TIDIA,   http:// incubadora.Fapesp.br/projects/biocombustivel/, it was possible to implement collaborative work of researchers including other states such as Goias, Parana, Santa Catarina and Sao Paulo to participate in research involving the entire team using the proposed methodology. Despite significant interest from visitors in our project we are incubated seeking solutions to improve the content and dynamic management. Our experience shows that the incubator has served as a great tool to develop our projects, with working interests of seven researchers who have personal Web pages, featuring information about the work, ongoing projects and pages for each researcher, in order to provide free, with limited control by the project coordinator. For our collaborative project to develop the methodology to implement this pilot study with interactive network to facilitate our integration work we have the participation of teachers, technicians, students and communities taking into account the new paradigm of collaborative development, based on interactive Web, in which the intelligent agent assumes the role of facilitator of learning, while the community becomes an active agent in exploratory learning seeking to develop collaborative work (1-3).

a.   *Environmentally focused biofuel and bioenergy technology assessment (EnTA)*

EnTA minimizes the need for detailed technical data and facilitates multi-stakeholder dialogues, leading to consensus decision-making related to selecting a technology that will be the most environmentally sound, socially acceptable and economically viable. EnTA thus overcomes many of the acknowledged shortcomings of environmental impact assessment (EIA). Through early recognition of key issues, possible alternatives, potential solutions and areas of consensus, EnTA allows further effort to focus on points of major conflict and dispute.EnTA focuses on characterizing the potential impacts associated with the outcome categories.

The outcome categories are: human health impacts; local natural environment impacts; social and cultural impacts; global impacts; resource sustainability; and economic viability

The performance of each technology option is evaluated using these broad categories.

b.   *Environmental impact assessment (EIA) Tools*

EIA is a decision support tool designed to help ensure that development and investment proposals, activities, projects and programmes are environmentally sound and sustainable. It facilitates identification, analysis and evaluation of the significance of potential environmental impacts and the identification and elaboration of measures that will avoid, remedy or mitigate any adverse impacts. EIA allows informed decision-making as to whether a proposal should proceed and, if so, under what conditions. It also establishes a monitoring and environmental management regime for implementing mitigation measures, monitoring impacts for compliance and ascertaining if impacts are as predicted.

Above all else, an EIA should foster public discussion about project proposals and technologies. This is important for ensuring an open and balanced approach and for encouraging consideration of those environmental effects, costs and benefits which cannot always be identified or measured by scientific or technological means.Most of the following tools are provided by super pro and google doc planilhas

c.   *Environmental risk assessment (EnRA) Tools*

All decisions and actions have environmental consequences, many of which are unintended. Risk is the likelihood that a harmful consequence will occur as a result of an action. EnRA is the determination of the potential impact of a chemical or physical agent on ecosystems, habitats and other ecological resources and on human health and well-being.

Risk assessment provides a relatively objective way to rank the hazards associated with the options under consideration, in terms of both human health and ecological effects, and to decide which are acceptable or manageable in the local context. Monto carlo stochastic simulation can be done based on superpro environrnement related process simulation software

d.   *Environmental management system (EMS)Tools*

An EMS can help maintain environmentally sound operations. It ensures that environmental issues are managed consistently and systematically throughout an organization. An EMS can also assist an organization in comprehensively addressing environmental issues and obtaining greater credibility with regulatory agencies and clients. It sets out environmental policies, objectives and targets for an organization, with predetermined indicators that provide measurable goals and a means of determining if the performance level has been reached.

For our present work , an EMS is an excellent mechanism for promoting positive change, such as increased uptake and continuing effective implementation of cleaner production systems. Successful implementation of an EMS can lead to increased environmental awareness, continuous improvement, and the adoption and use of environmentally sound technologies. We used supro deisgn enviornmental equipments , impact assement for EMS related work

e.   *New approaches to fostering learning based on web and social networks on line Tools*

Environmental training and education equips individuals with the motivation, knowledge, skills and commitment to identify and implement commercial and life-style decisions and civic actions that favour ecologically sustainable and socially just ways for people to interact with nature and with each other, and to relate to future generations. Yet the fundamental challenge is how to reach and equip the large numbers of people seeking environmental training and education, while at the same time providing relevant content and learning opportunities for each individual. This dichotomy has been a long-term dilemma for environmental trainers and educators. The increasing globalization of environmental training and education has enhanced the schism between generic, global approaches on the one hand and, on the other, locally based approaches that reflect specific needs attuned to local culture, environment and socio-economic circumstances.

An example of a generic environmental training package is the *Urban Environmental Management: Environmental Management System Training Resource Kit*, (UNEP)

f.   *Culturally appropriate pedagogy of Collaborative learning*

Interactive teaching/learning strategies with online discussions and "bulletin boards" can offer participants the capacity to schedule their learning so that it "fits in" with family organization, gender roles, local cultural obligations and social values. Similar outcomes can be achieved in conventional delivery using group work to evaluate alternative models/approaches; undertake SWOT (Strengths, Weaknesses, Opportunities and Threats) analyses; generate local action plans, etc. that enable participants to draw on their own experiences, and relate their learning to their owncultural, social and economic contexts.Different social, cultural and religious values mediate the importance participants and communities attach to particular environmental issues. The global relevance of generic environmental education programmes and training has to be explicitly connected with local issues and action. Information technologies can help generate databases of hypothetical and real-life case studies around specific local environmental problems that also have potential relevance to other locales where different constraints, opportunities and capacities give rise to possibilities for different solutions.

g.   *E-learning*

The growing recognition in recent years of the importance of learning, particularly lifelong learning, for the envisioned knowledge-based economies of the present century has made headway for online distance education such as web-based training and other forms of e-learning. To date, most initiatives have not included adequate provision of the guidance that is required to design such learning environments. Concerns exist that many learning materials currently available electronically are not purpose designed.

A process of analysis and application is required, to ensure that e-learning environments include quality teaching and learning approaches and materials that will engage the user in meaningful teaching and learning activities.

h.   *Content development and management tools*

Content development tools are those tools used to develop content of all kinds (i.e. informational, presentational and instructional) in any format (e.g. text, graphics, animation and video).

i.   *A learning content management system (LCMS)*

This is built to creates, stores and retrieves reusable content. Content is typically maintained in a centralized content repository in the form of small self-describing, uniquely identifiable objects or learning objects, each of which satisfies one or more well-defined learning objective. An advanced LCMS has the ability to track the user's interactions with each learning object and use this detailed information to deliver highly personalized learning experiences while providing authors with rich reports for analyzing clarity, relevance and effectiveness of content so it can be improved on an ongoing basis. We used , OLAT , UFRN SIGAA in the past, but find ate present the software Wuala and SAP stream works integrated with google docs are more user friendly for project building activity.

j.   *Learning management tools*

Learning management systems (LMS) can help manage an organization's learning activities and competencies. From an end-user point of view, an LMS provides an effective way to keep track of individual skills and competencies, and to provide a means of easily locating and registering for relevant learning activities to further improve the learner's skill levels. Administratively, an LMS makes it easy to track, manage and report on learning activities and competencies. An LMS primarily focuses on competencies, learning activities and the logistics of delivering learning activities. The software lory , engrade , canvas , edmode have been used.

k.   *Systematic training of research collaboratores , small entrepreneur , small organic agriculture producter, teachers and students.*

The system perform the project building based on the vast videos based multimedia as a tool for interactive rapid learning, meaningful content namely: those concerning environmental awareness and implementation of a new market vision, then it is suggested the dissemination and implementation of the use of interactive learning environments for education at the lower levels as a way to facilitate what now going, thus creating a new approach to the applications of technologies as tools education in its many different levels as a way to humanize relations with the socially constructed knowledge management i. Interaction is the foundation of our proposal for rapid collective learning .Open source Free Software sakaia LMS is a system environment that the community learns in an open system designed with the intention of making it easy for users to interact online, based around the constructivist view of learning. It could also be called an OLE (learning environment in an open system), or a VLE (Virtual Learning Environment), LMS and a system manager of web pages (CMS). It is flexible enough for use in different environments and communities easily interaction.A key advantage of these system tool is the ability to structure a learning space in a more convenient and better than being done with a separate pre-indexed interaction of activity realized using Sapstream work integrated with google doc and on line sharing swiss made digital incubator Wuala . The user starts with a blank note book in google note book , organize data collected and can build your site on it's way more intuitive and convenient slate comes with a set that uses a selection of "components", no pre-set structure that forces the user throughout the pedagogy teaching, have very objective database that can be reused more easily ..Implementation of Interact and beta testing were performed successfully on our website (http://biomassa.eq.ufrn.br/interact). With the experience gained at the Incubator of Digital Contents TIDIA-FAPESP Program, we are implementing a system hybrids involving the two servers, operating in conjunction with the Interact-LMS tools of multimedia content and dynamic database in an interactive and integrated is because the tool to be more flexible and more secure. The future development of our collaborative work, interactive, following a philosophy of training and education based on constructivist pedagogy and participatory social network will focus on interactive and integrative. The design of our portal incubator aims for a pilot study with public network in SaoPaulo digital multimedia content with interconnected network of multimedia content on clean technology and eco-business Inteact using google Apps for education using google docs , google videos and google [lus for integated on line wiki like , message and blog using contact circles and on line google groups as well lore , canvas was found to be very usefyl toools

l.   *Evaluation study for knowledge managements and Content sharing*

Digital Content TIDIA AGORA -FAPESP program, focusing on the inclusion of new parameters and enhancement of economic and environmentally friendly technology in public education, with emphasis on teaching context of modern technological advances and move to a teaching model grounded on applied technology . Is aimed at enabling researchers managers in training students for this new reality demands and the use of their work for the establishment of the digital school collection online. We propose a systematic training of teachers and students to perform the project based on the idea we have of multimedia as a tool for interactive learning, meaningful content and the issues facing today, namely: those concerning environmental awareness and implementation of a new market vision, then it is suggested the dissemination and implementation of the use of interactive learning environments for education at the lower levels as a way to facilitate what now going, thus creating a new approach to the applications of technologies as tools education in its many different levels as a way to humanize relations with the socially constructed knowledge in order to end or at least minimize, the subject of the removal process because of exclusionary dynamic that is implanted by the context and do not share. Interaction is the foundation of our proposal. Open soure .Open Free Software SAP STREAM WORK linked with google docs   is a system environment that the community learns in an open system designed with the intention of making it easy for users to interact online, based around the constructivist view of learning. It could also be called an OLE (learning environment in an open system), or a VLE (Virtual Learning Environment), LMS and a system manager of web pages (CMS). It is flexible enough for use in different environments and communities easily interação.A key advantage of all these open system are the ability to structure a learning space in a more convenient and better than being done with a separate pre-indexed interaction. The user starts with a spread sheet note book docs and can build your site on it's way more intuitive and convenient slate comes with a set that uses a selection of "components", no pre-set structure that forces the user throughout the pedagogy teaching, have very objective database that can be reused more easily

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m.   *Using the Systems Approach Tools*

• Process Mapping (Process characterization)

• Determining the Cost of the Loss (Activity-Based Costing)

• Selecting P2 Opportunities (80/20 Pareto Principle)

• Analyzing Root Causes (cause and effect, fishbone, diagram)

• Generating Alternative Solutions (Brainwriting)

• Selecting an Alternative for Implementation (Bubble-up/ bubble-down)

• Action Planning

Finally, a formal action plan should be prepared for every P2 activity that is planned for each year of a P2 program. In the rush to implement, P2 practitioners should not overlook the need to formalize their action plans. Each action plan should list the P2 alternative that will be implemented and show the sequence of steps necessary to implement the alternative. The person responsible for ensuring that each step is completed should be indicated in the action plan. Performance of that step must have some recognizable goal that must be reached. A metric should be devised to measure the progress toward meeting thatgoal and to provide a time frame for reaching the goal or completing that step. Finally, an indication of the resources required to reach the goal should be included in the formal action plan. the tools uused for project managmente are REDMIne , insightly . SAp JAM , lore e canvas lms.

Sites Developed Using Collaborative real time Tools For Small Community Power and Food Project Development are given below: https://sites.google.com/a/biomassa.eq.ufrn.br/engenharia-de-frutas/home/site-pratica-on-line

● Biodiesel   bioenergia e biocombustivel

● Alimento funcional e produtos natural

● Analise Economica

● Biocombustivel

● biossistemas Integrado

● Caju   estudo de caso caju

● Defumador

● DEFUMADOR PARA CARNES E PEIXES

- Ecologia Para Engenharia   academica

- Empreendedorismo e Inovação

- Empresa e Gestao tecnologica   educational gestao tecnologica ambiental

- Energia de Biomassa   energy, enterprise, small

- Engenharia Ecologia :Modelagem

- ETELIMPA   tratamento de efluentes e esgosto

- FluxogramaProjeto

- Gestao de Projeto de Energia Alternativas

ENGENHARIA DE CUSTOS - UFRN   engenharia, frutas, processamento, inovação .

- Pequeno Producao limpa

- Planejamento e Projetos   engenharia

- Plano de negocios   financas

- PortalSitesBiomassa   links de sites

- Producao Limpa e Ecologia Industrail   meioambiente, energia limpas●   Prof Pannir edu ProjetoGpecAgroFrutas

- secgaem frutas

- Sistema gestao Ambiental   meioambiente

- Small Biofuel Project Design

- Sustainable education

- Tecnologia Alcool   eductation Compartilhado com os usuários de todo o mundo Tecnologia de alcool

- Tecnologia de alimentcao Animal   Compartilhado com todos os usuários em biomassa.eq.ufrn.br

- Tecnologia de Pirolise e Carvao   Compartilhado com uma pessoa Tecnologia de Pirolise e Producao carvao

- TecnologiaSustentavel   appropriate alternate technology Compartilhado com os usuários de todo o mundo Eco products, eco design, agroenergy

- Teconologia de Biogas e Bioenergia   tecnologia Compartilhado com os usuários de todo o mundo Bioenergia usando efluente domesticos e urbanos

- bioenergy   appropriate alternate technology

- Caju   estudo de caso caju

- Ciencia do Ambiente,CIAM   educational

- GRUPO DE PESQUISA EM ENGENHARIA DE CUSTOS - UFRN   engenharia, frutas, processamento, inovação

- P+Limpa   meioambiente

- Planejamento e Projetos Industrials engenharia e Plano de negocios financas

- Small Biofuel Project Design

- SmallEnergyEcoEnterprise   energy, enterprise

- Techlimp educational

- Tecnologia Alcool   eductation

- Teconologia de Biogas   tecnologia

4. Conclusion

The complex system of Web server and programming language for database tools are all integrated as a platform following the philosophy of free software, open source, makes it the ideal environment for the development of system tools for bioenergy from wastes project.

The experience we intend to implement a hybrid system involving the two servers, operating in conjunction with the open source Wuala and digital incubator Tidia as knowledge management , but also there is a need for google plus e sap stream work integrated with google apps as the tools of sharing multimedia content and dynamic database in an interactive and integrated is because the tool to be more flexible and more secure..We succeeded to make possible real time collaborative on project design, project document content development and sharing .

The future development of our collaborative work, interactive, following a philosophy of training and education based on constructivist pedagogy and participatory social network will focus on interactive and integrative. The design of our portal of system tools with cloud and social net work incubator aims to improve the social network based on the use of biofuels and clean technology, with continued support from, Google Apps edu, FAPESP and UFRN, allowing greater access to local , national and international people via web

References

1. Jonassen, DH (1994). Thinking Technology: Toward a Constructivist Design Model.   Educational Technology. April, 1994, pp 34-37.

2. Leinonen, T., Virtanen, O., Hakkarainen, K., Kligyte, G. (2002). Collaborative Discovering of Key Ideas in Knowledge Buiding. Proceedings of the Computer Support for Collaborative Learning 2002, Conference.Boulder, Colorado, USA. URL: http://www2.uiah.fi/~tleinone/codi/codi_cscl.pdf

3. Mart Laanpere Hans Poldoja, Kaido Kikka, The Second Thoughts about Pedagogical Neutrality of LMS, Proceedings Fourth IEEE International Conference on Advanced Learning Technologies (ICALT'04) , 2004.

4. Sabbir Ahmed Kazi, Singapore Polytechnic, A Conceptual Framework for Web-based Intelligent Learning Environments Using SCORM-2004 Proceedings Fourth IEEE International Conference on Advanced Learning Technologies (ICALT'04) , 2004.

5. Pannirselvam .P.V, https://sites.google.com/a/biomassa.eq.ufrn.br/engenharia-de-frutas/

6. Pannirselvam .P.V, Project, Projetos: https://sites.google.com/a/biomassa.eq.ufrn.br/sites/

7. Pannirselvam .P,V, Wiki journal CV :http://ecosyseng.wetpaint.com/

8.Pannirselvam .PV, Blog Project, Projetos: http://posterous.com/#spaces/ufrngpec/posts/

9. Pannirselvam .PV, Newsletts, Jornal: http://storify.com/ufrngpec On line space simulation and modeling of ecobusiness,Espaço Simulação e Modelagem de Econegócios on line
http://rizzoma.com/topic/39080026fabcc04f140acb7d294d62e1/