INNOVATIVE ACADEMY PROFECT-DISINFECTION OF EFFLUENTS WITH RENEWABLE

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ABSTRACT

Holon Institute of Technology (HIT) and Ariel University (AU) trains highly qualified students, and play an important role in their integration upon graduation into key positions within the industry. A prerequisite for completion studies is to do a final research or project, an innovative project carried out a number of scientific principles to an applicable application. The goal of the project is to find a solution to high energy requirements in wastewater treatment. The students found a way to disinfection of effluents with renewable energy. This academy project research presented disinfection of effluents through electric fields applied on the effluents. The electric fields generated by solar panels. A prototype was constructed and preliminary results appear to be reduction in the number of general bacteria in the effluents and significant reduction in the number of indicators bacterial.

Keywords - Renewable Energy, Innovative, Academy project, Wastewater treatment.

INTRODUCTION

HIT and AU trains highly qualified students, and play an important role in their integration upon graduation into key positions within the industry. HIT aims to utilize the intellectual and professional potential of each and every student, so that they can fully integrate into the fast-paced technological world of today. Providing superior technological and scientific education enables HIT graduates to enter key leadership positions in both the private and public sectors. A prerequisite for completion studies is to do a final research or project, an innovative project carried out a number of scientific principles to an applicable application. In order to recycle the wastewater, it should meet some standards set by local authorities. With these standards wastewater should be treated. More than one treatment is needed to achieve the desired change in quality. All of the processes are high energy consumption. Students were required to carry out a research academy project as part of the study process. The goal of the project is to find a solution to high energy requirements in wastewater treatment. Renewable technologies are considered as clean sources of energy and optimal use of these resources. Minimize environmental impacts, produce minimum secondary wastes and are sustainable based on current and future economic and social societal needs, such as wastewater treatment. Renewable energy technologies provide an excellent opportunity for mitigation of Greenhouse gas emission and reducing global warming through substituting conventional energy sources. The students found a way to disinfection of effluents with renewable energy. This academy project research presented disinfection of effluents through electric fields applied on the effluents. The electric fields generated by solar panels. A prototype was constructed and preliminary results appear to be reduction in the number of general bacteria in the effluents and significant reduction in the number of indicators bacterial.

Holon Institute of Technology

Holon Institute of Technology (HIT) was established in 1969 and became an independent public academic institution of higher education in 1999, certified by the Council of Higher Education. HIT focuses on the teaching of sciences, engineering, computer science and technology, management of technology and design. It also emphasizes multi-disciplinary theoretical and practical research of innovative technologies from a professional scientific, economic and cultural perspective. HIT trains highly qualified students and play an important role in integrating them upon graduation into key positions within industry. HIT aspires to quality

and excellence in teaching and innovative research, and strives to introduce novel and unique cutting-edge teaching and research technologies.

Ariel University

Ariel University (AU) began modestly as a regional college in the 1980s. In 1994, at AU fewer than 300 students were pursuing academic degrees. After a period of accelerated growth the number of students registered for the 2008-2009 academic year reached 11,000. Ariel University (AU) believes that higher education should not only create opportunities for the broadest population base of students, but also help to provide the manpower needed for development of the Israeli economy. AU has therefore developed a multi-level curriculum offering quality education and training from the level of technicians to the highest academic level of graduate studies. From its inception, Ariel University has integrated research and development into its prime goal of educating the next generation of Israelis. The founders of the AU foresaw the contribution that cutting edge Israeli science and technology could provide back when the country's main exports were still agricultural.

The academy project

A prerequisite for completion studies is to do a final research or an innovative project. The final research or an innovative project will provide the education, support, and holistic individual guidance needed to unleash the potential in students.

Wastewater Treatment

Wastewater can have much higher levels of impurities as discussed, pesticides, and microorganism. But wastewater can be called as water of different form if the concentration of impurities is reduced, it can have applications similar to recycle water. Wastewater treatment is divided into three main processes. Physical processes comprising screening or straining, sedimentation, flocculation and filtration. Chemical treatment using adsorption, coagulation, ion exchange, precipitation and biological treatment processes with dispersed growth system (activated sludge, stabilization ponds); fixed film reactors (biological filters such as tricking filter). Wastewater treatment processes normally uses physical processes initially and later chemical processes like precipitation.

Renewable Energy

The Energy field is thriving. This is due to several factors: the world energy crisis, political trends that create a rise in oil prices and other environmental topics. All of these have brought upon the emergence of new and fascinating fields dealing with Energy [1]. Over the years, there has been an increase in demand for electrical power [2]. Such demands require the fossil-fuel power stations to burn more fuel. This causes heavy air pollution, which is detrimental the environment and our health. We are rapidly approaching the point of no return in terms of air pollution. Renewable energy and energy efficiency technologies are key to creating a clean energy future. Solar energy is clean energy. It produces no hazardous solid, liquid or gas wastes. It does not create water or air pollution. Direct production of electricity using sunlight is accomplished using photovoltaic cells, also called solar cells. They have no moving parts and are "clean" energy. A major limitation is cost, which greatly exceeds the cost of producing electricity using fossil fuels or nuclear power [3]. Thin film solar cells use layers of semiconductor materials only a few micrometres thick. Thin film technology has made it possible for solar cells to now double as rooftop shingles, roof tiles, building facades, or the glazing for skylights or atria. The solar cell version of items such as shingles offer the same protection and durability as ordinary asphalt shingles. Some solar cells are designed to operate with concentrated sunlight. These cells are built into concentrating collectors that use a lens to focus the sunlight onto the cells. This approach has both advantages and disadvantages compared with flat-plate PV arrays. The main idea is to use very little of the expensive semiconducting PV material while collecting as much sunlight as possible. But because the lenses must be pointed at the sun, the use of concentrating collectors is limited to the sunniest parts of the country. Some concentrating collectors are designed to be mounted on simple tracking devices, but most require sophisticated tracking devices, which further limit their use to electric utilities, industries, and large buildings. The performance of a solar cell is measured in terms of its efficiency at turning sunlight into electricity. Only sunlight of certain energies will work efficiently to create electricity, and much of it is reflected or absorbed by the material that makes up the cell. Because of this, a typical

commercial solar cell has an efficiency of 15%-about one-sixth of the sunlight striking the cell generates electricity. Low efficiencies mean that larger arrays are needed, and that means higher cost. Improving solar cell efficiencies while holding down the cost per cell is an important goal of the PV industry [4].

Pulsed electric fields (PEF)

Pulsed electric fields (PEF) were investigated as a potential means for reducing microbial levels in Wastewater. Degree of microbial reduction was related to field strength, pulse polarity, and pulse shape. Microbial reduction using pulsed electric fields (PEF) is gaining widespread research attention. Four to six log-cycle reductions in microbial populations by PEF have been demonstrated in milk and model foods [5, 6]. The use of PEF treatment for microbial disruption is desirable for development of a commercial non-thermal process. Solar water treatment is one of the current raising technologies for sustainable clean water production reducing the environmental impact by using renewable energy. There is a wide variety of systems using different mechanisms of solar energy conversion and new advances in material science and engineering reactors technologies: from solar stills [7].

The Innovative academy project

Wastewater is water that has been contaminated by domestic, industrial or public use and is not suitable for re-use without proper treatment and cleaning. The wastewater treatment process is the process of removing contaminants from wastewater after pre-treatment. The wastewater treatment process includes physical processes, chemicals and biologists whose goal is to bring the waste to a quality that is in compliance In this project, the efficiency of the process of applying electrical voltage to wastewater was examined in order to examine the possibility of using this process as an alternative to the traditional disinfecting process, which uses chemical and chlorine compounds. The source of energy for the process is from alternative sources, which are cheaper and do not constitute an economic burden on the wastewater treatment plant. Turning wastewater into effluents is a complex and expensive process. In order to reduce the process in this project we will examine alternative ways to disinfect chlorine and the possibility of alternative energy integration in the process. In the project direct external voltage was applied and tested how these stresses affect bacterial mortality. It was found that the higher the voltage applied, the shorter the exposure time required to obtain a certain mortality value. The "perceived" tension in the solution increases as the experiment progresses and the resistance decreases. There is a correlation between the magnitude of the voltage applied to the time of exposure to a given mortality value, high voltage - short exposure time.

Experimental results

The students built a test system for the project, source of energy supply to the facility using a solar panel (Fig. 1a) container of wastewater (Fig. 1b).

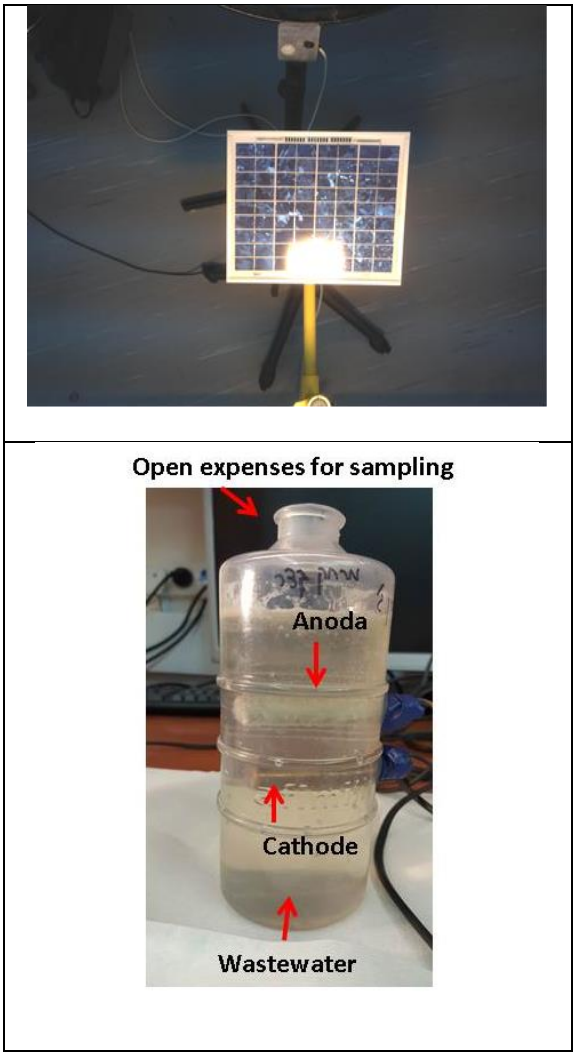
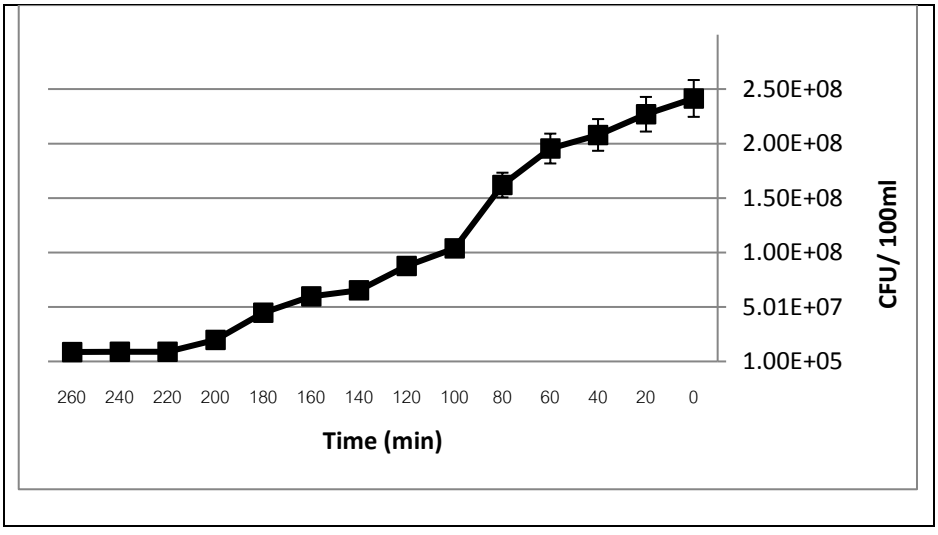


Fig.1. (a) Solar Panel; (b) container of wastewater

Test the efficiency of the system for the project. Decreased number of bacteria (Fig. 2a)., decreased turbidity of the wastewater (Fig. 2b). All these parameters indicate the proper operation of the facility.



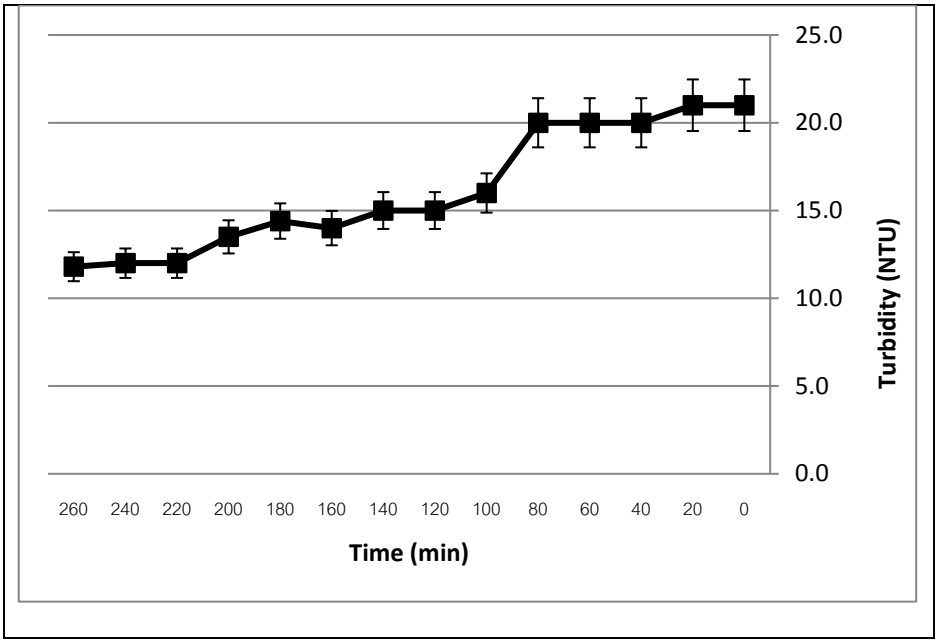


Fig.2. (a)Bacterial count (CFU/100 ml); (b)Turbidity (NTU).

CONCLUSION

This paper provides evidence that project-based learning method of teaching is an effective method. The method improved and independent work, communication skills of students especially in interactive skills and follow up the problems sub-scale.

ACKNOWLEDGMENTS

We would like to thank the Renewable Energy and Smart Grid Excellence Centre (HIT) for budgeting and supporting this project. To the Students who took part in the project: Karina Gaz, Daniel Cohavy, Hillel Myers and Raanan Ezra.

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HOW PARTICIPATION IN CAMPUS RECREATION PROGRAMMING IMPROVES STUDENT RENTETION

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ABSTRACT

Campus recreation programs play an important role in students choosing to return to the institution of higher education (Forrester, 2015). Although campus recreation provides various programs for students, intramural sports is one of the largest programs offered. There have been quantitative studies to support how intramural sports participation contributes to increased student retention rates, but the qualitative studies addressing how and why intramural sports participation contributes to increased student retention rates is severely lacking. Student satisfaction with the college experience tends to be higher with student participation in campus recreation programs (Kampf & Teske, 2013). Additionally, student satisfaction is a strong factor in retention rates and graduation rates which are essential benchmarks in determining student success. The purpose of this study was to determine if there was a correlation between intramural sports participation and student retention. A secondary analysis approach was used to investigate the retention rates of full time students who participated in intramural sports and demographic factors. The results of the study indicated that there is a positive relationship exists between intramural sports participation and student retention rates.

SPANISH FRANCHISING: EXPLAINING OWNERSHIP

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ABSTRACT

In this paper, we analyze the evolution pattern of ownership in Spanish franchised chains and we study some of the key factors or characteristics that can determine the proportion of franchised units. With this double aim, data is drawn for the period 1999-2012 from published annual guidebooks.

First, we have represented how the percentage of franchised units varies with time for the 307 chains included in the sample. In order to detect existing differences, we have also divided chains into two basic groups –service and product chains-. Second, taking into account data for 2012, we try to identify the key variables that significantly determine the propensity to franchise.

The paper is structured as follows. After a brief introduction, the procedure employed for data collection is explained. The third part of the paper is related to the description and meaning of the different variables employed and, lastly, we make reference to the basic conclusions and possible future extensions.

INTRODUCTION

The existing literature has employed different theoretical perspectives to justify the existence of franchising. Specifically, agency and resource-based theories have been applied to explain why, in some cases, the franchisor chooses to invest directly in a new outlet of the chain and, in others, he decides to franchise it.

In this sense, many empirical studies have established that franchised units are efficiently superior to franchisor-owned establishments[1]. This may be due to the fact that franchising enables increased chain growth, while it reduces monitoring costs, especially when units are located in a disperse manner. Geographic dispersion increases, in this sense, difficulties and costs associated with control of managers of franchisor-owned stores (Brickley, Dark & Weisback, 1991; Jensen & Meckling, 1976; Norton, 1988; Shane, 1996, 1998). More specifically, franchising increases unit performance through the allocation of ownership and control rights to the same individual, the franchisee, and this reduces adverse selection and moral hazard problems (Shane, 1996, 1998; Carney & Gedajlovic, 1991).

Because franchisees are the owners of the units they manage and, therefore, receive the residual rent generated by their establishments –once they have made royalty and other periodical payments to franchisor-, they have strong incentives to be efficient. Compared to this, managers of outlets owned by the chain have weaker incentives because they basically receive a fixed pay (Krueger, 1991) that does not depend on their store efficiency or profit (Rubin, 1978; Brickley & Dark, 1987). Even if compensation includes some type of variable pay, its relative importance is low because chains find that the opposite situation would compromise uniformity through reduction of quality standards (Bradach, 1998; Yin & Zajac, 2004). Therefore, for employees of franchisor-owned units, the reward for being efficient is, basically, the possibility of future hierarchical promotion.

Related to this, monitoring and incentives are seen as substitutes. In this sense, franchised units are subject to less control from central offices and their managers have powerful incentives. This makes them more sensitive to local market needs and conditions and it enhances profitability and efficiency as major objectives. Lower control over franchisees is evident if we observe that they enjoy wide-ranging powers to make certain decisions, which entails high autonomy. For example, many new actions or promotions are only optional for franchisees. Compared to this, managers of franchisor-owned outlets usually put into practice decisions adopted centrally by the owner of the chain. Therefore, persuasions, recommendations and suggestions made to franchisees substitute hierarchy and obligations for employees of franchisor-owned units.

[1] However, it seems more adequate to consider that neither structure is, in all circumstances, better than the other. Each one has its own advantages and disadvantages and if they are combined in a single chain, certain synergetic effects can arise.

Greater autonomy of franchised outlets is also observed through the greater number of these that are attributed to each area supervisor for monitoring compared to the number of franchisor-owned outlets[2] or the lower information requirements they are subject to[3].

Another stream of the franchising literature, far from establishing the superiority of one of these alternative forms of government, has highlighted that the presence of both type of units in the same chain gives rise to relevant synergetic effects (Bradach & Eccles, 1989; Lewin, 1997; Bradach, 1998; Dant et. al., 1996; Lafontaine & Kaufmann, 1994; Pénard et. al., 2002; Yin & Zajac, 2004; Sorenson & Sorensen, 2001). Specifically, franchisor-owned stores are useful for maintaining and developing brand name quality and homogeneity, exploiting certain economies of scale –for example, those associated with acquisitions form suppliers-, providing less opaque information compared to franchisees, etc. on the other hand, franchisees are best in supplying the chain with new ideas and adaptations to local markets. Therefore, the so called "plural form" or "dual form" is an efficient solution to mitigate asymmetrical information, limited rationality and incomplete contractual hazards.

Based on the above, the franchising decision will not represent a transitional strategy that will disappear with time. In this sense, franchisors do not choose to grow through franchised units as a minor temporarily evil to overcome certain resource restraints (Oxenfeldt & Kelly, 1969; Caves & Murphy, 1976; Norton, 1988; Lafontaine & Kaufmann, 1994). Ultimately, total integration is not the aim because, as we have mentioned, synergetic benefits arise form the presence of both type of outlets.

However, many studies have found that as chains reach maturity, they open less franchised units and, therefore, choose to growth, in greater extent, through franchisor-owned establishments (Oxenfeldt & Kelly, 1968-1969; Rubin, 1978; Caves & Murphy, 1976; Ozanne & Hunt, 1971). Time and chain age enable franchisors to acquire the necessary resources –financial, local market knowledge and management talent- to undergo new unit opening directly.

With the objective of understanding the growth pattern of franchised chains, we have chosen to graphically represent it. For this purpose, we analyze the evolution in Spain of the proportion of chain franchised units as the age of the chain increases. We find that this percentage increases more in the first years and them becomes more or less stable after five years since the first franchised outlet was opened[4].

After observing the evolution of chain composition, we try to answer the question as to why some chains grow through more franchised units and others employ, almost exclusively, franchisor-owned outlets. To shed some light over this, our intention is to discover which variables have a significant influence over the proportion of franchised establishments. For this purpose, a multiple regression model is developed.

DATA

Due to the non existence of a ready to use dada base related to franchising in Spain, data employed has been collected, in collaboration with a working group of the University of Oviedo (Spain)[5], from the annual franchise guidebooks published[6] for the period 1999-2012.

First, to represent the evolution pattern of ownership for Spanish indigenous chains, the proportion of franchised units was calculated as the quotient between number of chain franchised outlets in Spain and total number of chain outlets in Spain. This was done for each chain and for each year from 1999 to 2012[7]. However, from more than 1300 existing Spanish franchised chains found, only around 500 fulfilled the necessary condition of having started to franchise in 1999 or before and continue to do so in 2012. Moreover, it was only possible to collect sufficient data for 307 of these that integrated the final sample employed.

Likewise, the time, in years, the chain had been franchising was calculated as the difference between the year the data was observed (1999, 2000…) and the year the chain was established. To the value obtained, we added one because, in some cases, we had an incongruent situation in which the chain had been franchising for zero years and despite of this did have franchised units. This did not seem correct.

Given the impossibility of graphically representing data directly, we divided chains into groups according to the number of years franchising. For each group, we calculated the average value of the proportion of franchised outlets and this was what was finally represented. Additionally, we also divided the

[2] Related to this, Bradach (1998) found that each area supervisor is in charge of an average of 90 franchised units. On the other hand, when they have to monitor franchisor-owned units, this number is reduced to 6.

[3] Franchised units are subject to low formal information requests because communication with central offices is, basically, of the informal type.

[4] Lafontaine & Shaw (2001) find that the proportion of franchised establishments stabilizes after 10-15 years in the U.S. and Pénard et. Al. (2002) establish that this period is reduced to 10-11 years for the case of France. The percentage reached varies from chain to chain, even though most empirical studies make reference to an average proportion of 25-35%.

[5] We specially thank Prof. Manuel González and Prof. Begoña López for their help.

[6] We have drawn data from Tormo & Asociados, Barbadillo & Asociados, Franchisa and Asociación Española de Franquiciadores.

[7] Therefore, the presence and number of outlets in foreign markets was not taken into account in this paper.

sample into two groups according to chain activity –service or product- and repeated the above process again for each one.

Related to data collection, we must make reference to important incongruent information between guidebooks. In this sense, in some cases, for the same year and variable, guidebooks contained very different values. To give solution to this problem we contacted with the franchisor, on the telephone or web page with the aim of reflecting the true value of the variable. Nevertheless, when this was not possible we took the value proportioned by Tormo & Asociados because this guidebook had resulted, in other occasions, that it was the most accurate.

Once we concluded data collection form annual guidebooks for period 1999-2012, we are now merged in completing this information with financial and economic data taken from Annual Accounts (profits, advertising costs, sales, etc.)

Second, for ordinary least squares (OLS) regression, we introduced other key variables. In some cases, data for some variables was available in interval terms. In these cases, franchisors reported a maximum and minimum because exact numerical value depended on other circumstances like unit location or dimension, so we introduced the average of the variable. This analysis was conducted for data corresponding to year 2012.

VARIABLES

After plotting pattern for outlet ownership evolution, we conducted an OLS regression in SPSS. The dependent variable –proportion of franchised outlets- is modeled as the natural log of the ratio of the percent franchised by the percent company-owned. This transformation has been used in many other empirical studies (see, for example, Shane, 1998 or Michael, 1996) and Berry (1994) demonstrated, through a series of montecarlo experiments, that it constituted a more robust and precise measure of the distribution compared to the simple percentage variable both for OLS and Tobit regressions.

The independent variables employed are displayed below:

- ***SECTOR.*** It is equal to one when the chain is basically dedicated to the distribution of products and equal to zero when its object consists in the commercialization of services.
  We expect to find that service activities have higher percentages of franchised outlets (Sen, 1998; Lal, 1990). This is because in this type of chains, local production has greater relevance and, therefore, tasks to be done in each establishment are, on the whole, more labour-intensive. This type of activities are subject to greater relax and opportunism, so given that franchisees have high-powered incentives, it will be more efficient to grow through a higher proportion of franchised units. On the other hand, when activities to be done locally have a significantly lower importance –in the case of product distribution chains-, local agent effort looses importance and we should find chains with higher integration percentages.
  Related to the above, service chains face greater supervision difficulties or monitoring costs. This causes that franchisors will choose to substitute behaviour control with output control through more franchised units.
  Given the above, service chains should present higher proportions of franchised outlets.
- ***AGE.*** This variable represents the number of years since the franchisor opened the first unit. Therefore, it is the difference, in years, between 2012 and the year the firm was established.
  It is quite evident that, in general, the longer this period is, the greater the proportion of franchised units will be. This is not only due to the simple fact that time just goes by. AGE has been used as a proxy for franchisor experience (Weaven & Frazer, 2003), brand name value or reputation (González-Díaz & López, 2003; Affuso, 2002; Lafontaine, 1992) and for franchisor accumulated resources (Alon & McKee, 1999; Carney & Gedajlovic, 1991; Combs & Ketchen, 1999). This way, given that the number of potential franchisees willing to join the chain increases as chain perceived value does, we expect to find a positive relation over the proportion of franchised units.
- ***YNOTF.*** It represents the number of years the chain initially remained without franchising any outlets at all. Therefore, it is the difference, in years, between the year the chain was established –this is, the first franchised outlet was opened- and the year the firm was created.
  We expect YNOTF to have a negative influence over the proportion of franchised units because this period of time can reflect, in a certain manner, franchisor difficulties to adequately design and develop the complete franchise package (González-Díaz & López, 2003). Moreover, during that period the franchisor has installed a totally centralized organizational form, and it can result difficult for him to let in quasi-independent businessmen that will make their own decisions.
- ***INTERN.*** This independent variable will be equal to one when the chain has some sort of international presence and equal to zero when it has outlets only in the domestic Spanish market.
  If the franchisor has chosen to expand activities overseas, we should find a higher proportion of franchised units because, in most cases, he will not have the sufficient local market knowledge to undertake unit opening by himself. Local franchisees will have much better and complete information about demand

conditions, governmental procedures, etc. and, moreover, they have powerful incentives to keep it up to date.

Therefore, we expect to find that chains with international presence present higher values for the proportion of franchised outlets.

- ***SIZE.*** In order to measure the size of the chain, we have chosen to use the total number of outlets of the chain –franchised and franchisor-owned-. Chain size has been used, in many occasions, as a proxy for geographical dispersion and, in this sense, for monitoring difficulties (Agrawal & Lal, 1995; Minkler, 1992; Brickley, Dark & Weisbach 1991; Lafontaine, 1995; Kehoe, 1996; Hoffman & Preble, 2001). So, geographical distance of the new outlet would make monitoring difficult. This problem would become even more outstanding if expansion is done through franchisor-owned units. However, if the decision is to franchise the new outlet, monitoring needs are reduced, so franchising reduces control costs when moral hazards exist (Brickley, Dark & Weisbach, 1991; Lafontaine, 1992).

  Form another point of view, chain size has also been used as a proxy for brand name value. In this sense, greater chain size will increase the number of potential consumers attracted and served (Lafontaine, 1992). This will convince franchisees, in greater extent, to join the chain.

  Given the above, chain size is likely to favor franchising and, therefore, it should have a positive influence over the percentage of franchised units.
- ***ININVEST.*** The initial investment is the amount, in euros, the franchisee must invest in his outlet to join the chain. However, we have not taken into account here the initial entry fee paid to the franchisor; this amount is included in variable FIXED PAYM.

  Therefore, ININVEST reflects the amount the franchisee must pay to adequately lay out and decorate his premises. If the resource scarcity hypothesis for franchising is true, this variable would have a positive influence over the dependent variable. However, it must be taken into account that higher investments increase franchisee´ risk and, this may reduce available franchisees. This would mean that ININVEST would have a negative influence over the proportion of franchised units.

  Related to this, it is observed that units located in large urban cities –bigger outlets and that, therefore, entail higher associated investments- are usually franchisor-owned (Hunt, 1973; Thompson, 1992). Maybe this is because the existence of various outlets in the same city reduces monitoring costs and performs as benchmarks. On the other hand, in isolated areas, where only one unit usually exists, ownership is assigned to franchisee because free-riding –one of the basic franchising hazards- is reduced due to the existence of repeating-type customers. In this sense, negative consequences of reducing quality would mainly correspond to the opportunistic agent (Brickley, Dark & Weisback, 1991). This has a certain relation with another dependent variable included in the analysis; POPUL.

  Results reported by Brickley (1999) are also inconsistent with the general statement that franchising is used to overcome franchisor resource restraints. He finds that the probability of direct investment of the franchisor increases with amount needed. It seems that greater initial investments increase risk and demanded profitability for franchisees, and this reduces advantages of franchising and limits franchisee´ availability.
- ***TOTAL VAR.*** To calculate the value of this variable, we have added the percentages of royalties and advertising fees for each chain. When these stipulated payments were not established as a percentage of sales, but through a fixed sum, they were not included here –they were taken into account in FIXED PAYM-.

  Royalty rates contribute to the alignment of both parties interest because both franchisee and franchisor will be interested in increasing sales. Because royalty payments are associated to sales, the franchisor signals his intention of undergoing the necessary investments to maintain and increase brand name value and to detect opportunistic behaviors that reduce chain sales. The franchisee is always interested in increasing his sales because his profit is linked to the former.

  High royalty payments would serve as a powerful incentive to franchisors to control or monitor activities n order to increase brand name value but would reduce franchisee motivation to be efficient. Moreover, the number of potential franchisees willing to join the chain will be reduced and, form another point of view, part of the advantages associated to franchising will disappear –economic conditions would be closer to that of franchisor-owned units-. Therefore, a negative relation is likely to exist between this variable and the proportion of franchised units.
- ***DUR.*** Longer contract duration contributes, from a transaction costs view, to reduce advantages of hierarchy compared to that of the market. Transaction costs associated to this last option will be reduced and, as an intermediate case, the same will occur for franchising.

  Besides, longer contractual duration also reduces agency costs for various reasons (Shane, 1998). First, the franchisor has more powerful incentives to collect information on suitable potential franchisees and, in this manner, lower adverse selection hazards (Eisenhardt, 1989). Second, the possibility of moral hazard is reduced because informational problems disappear with time. Lastly, the agent has mayor incentives to be

diligent and to reduce opportunism because the relative importance of short term profits arisen as a consequence of opportunistic behavior is diminished.

Franchise contracts usually fix a determined initial duration for the relation between parties or establish that it will be unlimited. In the first case, possible renovations are contemplated, so the franchisee can consider his investment as long-termed. This acts as a stimulus for him to try to discover his customer tastes and characteristics in order to recover investment (Bradach, 1998).

Based on the above, we expect contract duration to have a positive relation over the dependent variable.

- ***SURFACE.*** This variable expresses the minimum surface, measured in meters, fixed by the franchisor in order to permit the opening of a new unit of the chain. Therefore, to some extent it can reflect effort required from the franchisee and, in this manner, reduce the number of potential franchisees willing to join the chain.

  The negative relation between SURFACE and the dependent variable can also be due to the fact mentioned above that the franchisor is usually the owner of the larger outlets located in big cities, while the franchisee is left with the smaller more disperse units.
- ***POPUL.*** We already made reference to the high probability of large units to be owned by the franchisor. Smaller units located in little villages or towns –where only one outlet of the chain usually exists- are more commonly franchised. Therefore, the minimum population fixed by the franchisor to open a new store in a given location should have a negative influence over the dependent variable.
- ***FIXED PAYM.*** The value of the last independent variable is the sum of the necessary entry fee and the actual or present value of fixed periodical payments –basically royalties and advertising fees when they are not determined as a percentage of sales-.

  This variable is also positively related to franchisee effort. Therefore, we expect to find a negative influence over the proportion of franchised units.

  However, entry fee compensates the franchisor for selection and initial training costs while the remaining periodical payments are justified as being remuneration for brand value and on-going support (Lafontaine, 1992; Lafontaine & Shaw, 1999). It is for this reason that we may find a positive relation between FIXED PAYM and the proportion of franchised units, given that the latter may be willing to make larger payments in exchange for greater support and intangible resource transfer from the franchisor.

RESULTS

First, we represented the evolution of the proportion of franchised outlets for Spanish indigenous chains in our sample for period 1999-2012. For this aim, data was calculated and regrouped as explained above.

Figure 1 shows that the dependent variable increases with respect to the number of years the chain has

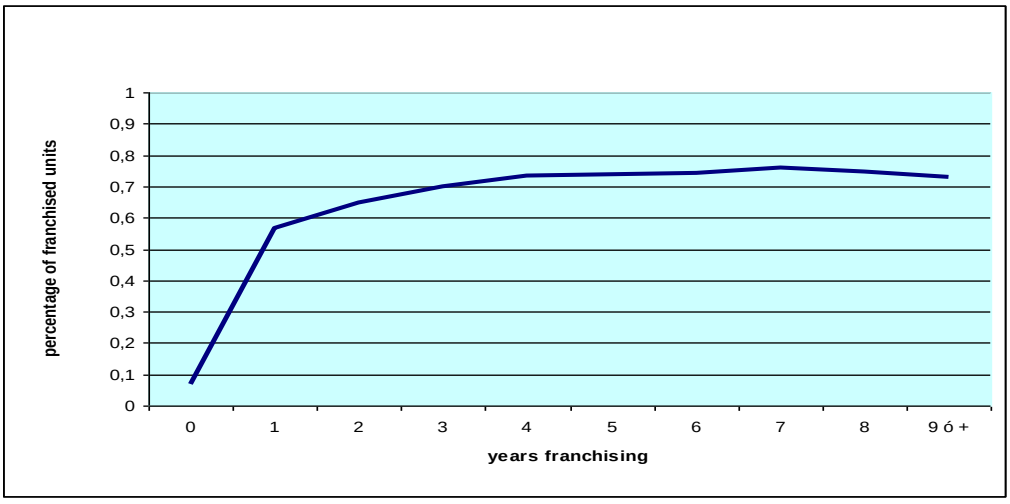

Figure 1: The evolution of the proportion of franchised units for Spanish chains (1999-2012).

been franchising. After five years, this value is stabilized round a value of 74% -alternatively, the proportion of franchisor-owned outlets reaches 26%-. In the first years, franchising is used in a much more intensive manner –it must be taken into account that we are representing the evolution of the dependent variable with respect to the number of years franchising. However, chains usually stay initially some years without franchising; during this time period, all units are franchisor-owned-. These results are consisted with that of López et.al. (2000); the only differences are that here stabilization takes place a little earlier and the percentage of franchised units is slightly lower.

Because we expected to detect different ownership evolution patterns with respect to the type of activity, chains were divided into two groups, namely, service and product chains.
Figure 2 shows that service chains, at average, present a higher proportion of franchised outlets compared to product distribution chains. This is in line with results obtained by Pénard et. al. (2002) and Lafontaine & Shaw (2001), even though the percentage of units franchised is slighter higher in our case –nearly 80% for service chains and 70% for product chains-.
In order to detect additional differences between chains according to their activity, we considered, based on the classification provided by annual franchise guidebooks, various sector of activities. In this sense, we divided the sample of chains into eight sectors, four of the service type and another four for product distribution. However, results are not displayed because we did not find relevant differences given that all four groups of chains of each type presented comparable evolution patterns.

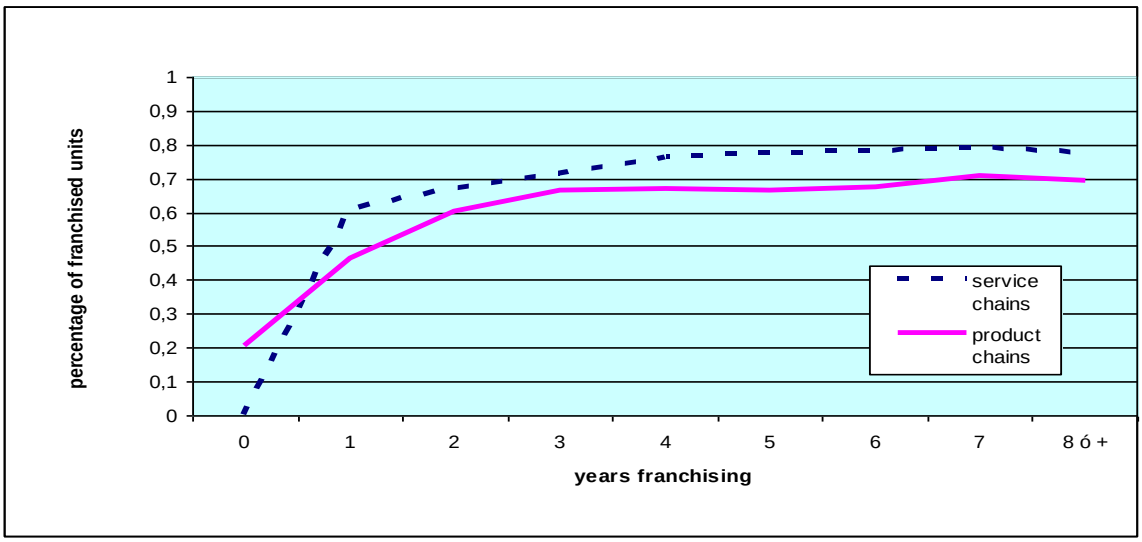

Figure 2: The evolution of the proportion of franchised units for Spanish service and product distribution chains (1999-2012).

Next, Table 1 displays OLS regression results. The dependent variable measures the proportion of franchised units of chains.
Within the independent variables, SECTOR, AGE, YNOTF, INTERN, SIZE, ININVEST and POPUL are found to have a significant influence over the proportion of franchised outlets. All of the former present the expected signs.
Therefore, we can say that service chains choose to franchise a higher proportion of outlets. This seems to confirm that when necessary local activities are of more relevance and more labor-intensive, the given incentive system makes franchising the best organizational option.
Second, chains that have been in business for a longer time –AGE- tend to present larger proportions of franchised establishments. It's obvious that as time since the franchisor opened the first outlet of the firm goes by, the greater the value of the dependent variable. Moreover, this effect can also be due to increased franchisor experience and brand name value as chain age is longer; this would surely have a positive influence over the number of franchisees willing to join the chain.
Variable YNOTF has a significant negative influence over the proportion of franchised units. Therefore, as the number of initial years during which all outlets are franchisor-owned and no franchised units are opened increases, franchisor seem to be reluctant to le franchisees in. They get used to a centralized organizational form where all decisions are made by central offices and this situation reduces future franchising activity.
Another significant independent variable is the presence of chain outlets in foreign markets. INTERN has a positive influence over the dependent variable. This means that when the chain has outlets abroad, it chooses to grow, more intensively, through franchised units. Geographical dispersion and reduced franchisor local market knowledge reduces the proportion of franchisor-owned units.
SIZE, measured as the total number of chain units, has a significant positive relation over the percentage of franchised outlets. Therefore, larger chains exhibit a higher proportion of the latter, probably because these chains are subject to increased geographical dispersion.
The quantity of initial investment –ININVEST-, basically needed to adapt store premises to franchisor requirements, reduces the proportion of franchised outlets of chains. Franchisee risk aversion and the impossibility for these to diversify investment adequately seem to reduce the number of potential franchisees

willing to join the chain. We do not, therefore, find any empirical evidence to prove that franchising exists due to resource restraints of franchisors. It is the franchisor that directly invests in the opening of new outlets when the necessary investment is higher.

The last significant independent variable to explain the proportion of franchised units is the population fixed by the franchisor as the necessary minimum in order to open a new outlet in a given city or town –POPUL-. It has a negative relation over the dependent variable so we can say that the franchisor tends to be the direct owner of units located in the larger cities, while outlets situated in smaller towns are chosen to be franchised.

The remaining variables included in the analysis –TOTAL VAR., DUR, SURFACE and FIXED PAYM- do not help to explain, in a statistically significant manner, variations in the proportion of franchised units. However, the signs displayed by the first three of these are as expected. On the contrary, FIXED PAYM presents a positive relation; this seems to indicate that larger periodical fixed payments do not reduce franchisee interest to join the chain. Maybe, this is because they are willing to pay more in exchange for greater intangible resource transfer and support form franchisor.

Independent variables (R-squared = 0,39)		Standardized Coefficients Beta
(Constant)	2,338	
SECTOR		-,214 (***)
AGE		,059 (*)
YNOTF		-,109 (**)
INTERN		,106 (**)
SIZE		,336 (***)
ININVEST		-,062 (*)
TOTAL VAR.		-,042
DUR		,071
SURFACE		-,038
POPUL		-,092 (*)
FIXED PAYM		,020

Table 1: Regression results (n=316).
(*) significant at 0.1.
(**) significant at 0.05.
(***) significant at 0.01.

CONCLUDING REMARKS

In this paper, we have intended to determine some of the basic characteristics and contractual conditions that have a significant influence over the proportion of franchised units in Spanish chains. For this aim, we have conducted an OLS multiple regression using data for Spanish indigenous chains published in annual franchise guidebooks for year 2012.

Results suggest that SECTOR, AGE, YNOTF, INTERN, SIZE, ININVEST and POPUL help to explain, in a significant manner, variations in the dependent variable. Therefore, chains that exhibit a higher proportion of franchised outlets are those that are dedicated to the commercialization of services, have been in business for a longer period, have stayed initially a smaller number of years without franchising at all, have decided to internationalize activities in some extent, entail lower initial investments and fix lower minimum populations to allow for a new unit to open.

Limitations of the analysis include, for example, the low value obtained for Square-R. Even though it is in line with that found in most franchising research, we are convinced that other relevant variables have not been taken into account. Therefore, our intention is to continue working on this in the future.

Another limitation comes from the use of aggregate data at the chain level. A more fine-grained analysis should use outlet level data within firms to explain why a given outlet is franchised or company-owned.

Lastly, we must point out that given that this is a preliminary analysis, we have chosen to employ OLS regression. However, given that relations between variables are quite surely not lineal, it would be convenient to study the use of other types of analysis and control variables. Specifically, our intention is to develop a Systems Dynamics model to explain chain growth and variable interdependencies with the incorporation of financial data.

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ORGANIZED ACTIVE LEARNING BY CREATIVE BASED LEARNING

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ABSTRACT

This article aims to provide a framework for proactive learning management using a creative learning-based learning model to develop 21st century learners to have analytical thinking skills teamwork and problem solving skills. Proactive learning is a teaching method that is suitable for learning, which is intended as a learning process. Interpretation is the learning through practice or action, the "knowledge" that occurs is the knowledge gained from experience. The process of organizing learning activities requires students to have more action than listening. Learning activities by reading, writing, interacting, and problem-solving also allows students to use advanced thinking processes, such as analysis, synthesis, and evaluation.

The creative learning management model is based on Problem-based learning PBL, one of the centralized learner-centered approaches that work well in many countries. Active learning is the teaching that learns to be active in research, rather than waiting for the original lecture in the traditional teaching. The instructor will have a clear instructional schedule from chapter 1 until the content of the course is completed. The teaching style is clearly divided into subjects. But in CBL, the instructor changes roles as a speaker. Detailed as a director, the student is learning to convert from a lecturer to a facilitator.

Keyword: Active learning, Creative based learning

INTRODUCTION

The educational management under the National Education Act, 2542B.E. [2542B.E.], as amended (No. 2), 2545B.E. (2542B.E.), states that educational management must be in order to develop Thai people into the perfect human body, mind, intellect, knowledge and the virtue, ethic and culture of living can live happily with others and to define the management of education in Section 4, Number 22 says that education must be based on the principle that all learners have the ability to learn and develop themselves and assume the learner is the most important. The educational process must encourage the learner to develop naturally and fully according to his potential and article 24 states [XX] that the learning process is organized provide educational institutions and related organizations to organize content and activities in accordance with the interest of students taking into account the differences between individuals allow students to practice thinking skills, management, coping with situations and apply knowledge to prevent and solve problems, organize activities for learners to learn from real experiences, practicing the practice is done as a loving reading and continuous pursuit of knowledge [Ministry of Education, 2546B.E.), which is in line with the standard framework for higher education in 2552B.E. that aims to encourage students to develop their moral, ethical, intellectual and intellectual competencies. Interpersonal skills and responsibilities include numerical

analytical thinking skills, communication and use of the information technology, which feature is the ability of the learner to make life-long learning possible, so that the instructor will conduct learning activities that will lead to success under the National Education Act. The teaching and learning management must have a method of teaching and learning is focused on the students. There are various teaching methods to encourage students to develop to their full potential.

Active Learning is the learning that students need to find meaning and to understand themselves or together with friends, for example, search, answer, discuss, present, and summarize ideas together or transforming students from passive to learner-centered learning activities (Ministry of Education, 2546B.E.) or as a process of learning activities. The learner must have the opportunity to do more than just listen. The activities must be provided to the learner by reading, writing, interacting and analyzing problems. Moreover, the learners have to use advanced thinking process: synthesis analysis and valuation which corresponds to the idea that the learning activities that can give the learners a better understanding of the concepts taught in the depth and depth. Permanent Learners can trust the knowledge very well. Have fun with the activities that take place in teaching and can integrate the knowledge that has benefited, which is the result of learners taking part in activities or seeking knowledge on their own, proactive learning can create self-learning for learners. This is because proactive learning is a centralized, student-centered instructional management. There are classroom activities to keep learners engaged in learning. There are activities for students to do along with lectures have the group activities or online activities In order to motivate students to be active in their studies. Therefore, it is possible that aggressive teaching is a learning process that encourages learners to build their own knowledge[Songkhram, 2555B.E.].

Creativity Based Learning (CBL) The CBL teaching activity is a new kind of teaching that students have never encountered before. It is a teaching that focuses on action, so students interested in Active (Active Learning) want to learn. Study with pleasure and fun, in accordance with Leuchaipanich (Leuchaipanich, 2558B.E.: 31), that creative teaching is the basis. Is a deal Active learners are taught to be active learners instead of lectures (Lecture Method) both skills in research. The work skills and thinking skills instead of the original content today's, where the teaching is not about the instructor alone. The mobile internet is a kind of media that is a source of knowledge from various places. The learner can access it by himself, as the Niumhom (Niumhom, 2540 B.E.: 81-85) states that using the internet will help learners to get up-to-date information, where the learners can learn by themselves and help to study and study. In addition, the research found that the most common problem in organizing activities was the problem of location of activities on this issue. The problem of venue is a very important issue to organize. Teaching activities due to the CBL teaching, site availability is very important, especially in the classroom, room atmosphere and the equipment used in the classroom must not be damaged, such as computers, projectors and audio must be conducive to teaching and learning to the instructor and most learners such as Amornwiwat (Amornwiwat, 2530B.E.: 13) say that the classroom must be neat and tidy, clean, with amenities and facilities. To encourage the study of Students are more comfortable, such as class size, where light is right and there is enough light.

OBJECTIVES

The purpose of the article is proactive learning management using a creative learning-based learning model.

1. Develop learning and innovation skills for learners.
2. Develop information and technology skills for learners.
3. Develop thinking skills for learners.

METHODOLOGY

The process of screening the knowledge to be used in the learning management, the author has conducted a knowledge screening by using knowledge management (KM)

Knowledge Management Process

Step 1: Knowledge Identification

1. Inspire Curiosity
2. The opportunity to search, gathers information, distinguish and create knowledge, Self-study.

Teaching is often done when there is a question, individual or group teaching more than the total teaching.

3. Provide students with the opportunity to find a way to solve problems independently, individual problem solving.
4. Use games to engage in classroom learning game-based learning.
5. Grouping project team project
6. Present the work. With various creative ways
7. Use measurable results to measure the goals that have been designed.
8. Informal assessments and multidimensional assessment tools

Step 2: Knowledge Creation and Acquisition

At this stage, it is a search of information from various sources, reliable, for example, from a thesis / dissertation database system from the research database and from the books.

Step 3: Knowledge Organization

1. Tell the topic and objectives of the course.
2. Learners registered to access the e-Learning website.

3 Creates the groups to enhance communication between instructors and learners through the line program.

Step 4: Knowledge Codification and Refinement

1. Learners work in groups according to their own choice. And study knowledge
2. Instructors provide advice, counsel and guidance.
3. Q & A and discussion on issues.
4. Group discussions both within and between groups to share knowledge.

5. Friends help friends during group work

Step 5: Knowledge Access

1. The listener asks questions and a new learning from the question.

Step 6: Knowledge Sharing

1. Presentation of front-page group works or uses a different presentation format, such as Snow ball.

2. Listeners ask questions and a new learning from the question.

3. Instructors and learners summarize the content together.

Step 7: Learning

1. Step preparation

Teaching Topics

Power point

Instructional materials

VDO Clip Example

2. Steps to teach

1. Arousing interest

1.1 Examine the learner's background by asking questions about the content of the course.

1.2 Watch Clip VDO, prompt and take interest in the lesson.

1.3 Ask questions for students to think about the VDO Clip information received.

2. Problem Settlement and Division / Lecture

2.1 Tell the topic and objectives of the course.

2.2 Learners register to use the e-Learning website.

2.3 Create groups to enhance communication between instructors and learners through the Line program.

2.4 Describe and address problems in the topics studied.

2.5 grouped learners Research the problem.

3. Researching and thinking

3.1 Learners work in groups based on And study the knowledge from the website or teaching materials.

3.2 Instructors provide advice, counsel, and guidance.

3.3 Q & A and Q & A on issues

3.4 Discuss both within and between groups to share knowledge

3.5 friends help friends during group work

CONCLUSION

Students learn by using teaching styles.Creative thinking is the basis of the teaching. Create a base for students to understand the content more from the problem. Learn from Learning resources and gain knowledge to create results.For this reason, the use of learning activities.Creative Teaching Basics (CBL) can be Improve student achievement

DISCUSSION

Improving the thinking skills of studentsEarly Childhood Education After being developed proactive learning management using a creative learning-based learning model. The average was moderate show that students in early childhood education.The development of thinking skills. By aggressive learning management using a creative learning-based learning model. That is like this.The creative teaching-learning activities as a stimulus.Thinking skills Students can Express ideas.A variety of observations and observations. Creative is a multi-faceted idea. Teacher's role Teachers need to be motivated. Provide students with the enthusiasm for project ideas. Provide appropriate guidance to create a positive environment to study the preparation of reports to be complete and accurate. The student must be a designer and planner. Project yourself this step will help the learner. Learn exchange with other groups and exchanges with teachers.

ACKNOWLEDGMENT

The author would like to thank the Suan Sunandha Rajabhat University, Bangkok, Thailand for financial support.

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PARTICIPATORY LEARNING: FROM THEORY TO PRACTICE IN PSYCHOLOGY FOR TEACHER COURSE

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ABSTRACT

This article demonstrates the participatory learning process model called "Participatory Learning (PL)" is a learning-based learning-centered learning management system. It consists of 4 steps: Experience, Reflection and Discussion, Concept, and Experiment. This article aims to (1) bring the participatory learning process into use in teaching psychology for teachers, (2) discuss the advantages of participatory learning management in teaching and learning in the field of pedagogical psychology, where the participatory teaching enables learners to participate in the classroom. They are responsible for their own learning, practice group activity planning, seek self-knowledge, and report learning outcomes, giving students the opportunity to combine their original experiences with new knowledge, Experimental/Applied stage, students share class roles, discuss issues and suggestions after activities together.

Keyword: Participatory learning, Knowledge management, Psychology for Teacher course

INTRODUCTION

Participatory learning evolved from the fact that John Dewey's educational philosophy began to use the Learning by doing approach, which was the basis for developing a learning process that drew on the learner's ability to learn in the form of learning called "Active learning", [1]where the learners engage in more instructional activities, encouraging learners to think and solve problem-centered learners. At a later stage, it was developed as a learning model by solving collaborative learning problems [2]

The principle of participatory learning is the process of knowledge creation, is a learning experience based on the student's original experience resulting in new knowledge continuously. Learners can define the principles of practice and apply the theory or principle correctly. It is learning to promote teamwork interactions between instructors and students, interaction among students, and expression and writing [3] (Oeumcharoen, 2006, cited in Pitsathira, 2010, pp. 8-9). The steps are as follows.

1. Experience is a step that teachers encourage students to bring their own knowledge and experience by educating teachers from various media, including working groups. It is the process by which the instructor tries to motivate the learner to develop his or her own experience. Developing as a learning tool depends on the use of the group process. The content that is used to educate or lead to teaching is mostly a matter of which the student is already experienced.

2. Reflection is the stage where the learner can express his or her feelings and feelings to the group members. Learners will learn the thoughts and feelings of others who are different from themselves, which will help them to learn more widely. Reflection by discussion will make a variety of conclusions. In addition, students will learn how to work as a team, the role of good members, self-control and acceptance of other people's opinions.

3. The concept is the stage where the learner learns about the subject matter or develops the cognitive domain (Cognitive) in many ways from instructor's lectures, assignments to read from documentation or by reflection or discussion by the instructor, may summarize the ideas from the discussions and presentations of each group. Students will understand and come up with ideas. This conceptualization will result in an understanding of the content of the process of practicing skills that will make it easier for the learner to practice.

4. To experiment or apply. It is a step that requires the learner to take advantage of the new conceptual stage to apply the new style or situation to its own way.

Organizing participatory learning processes in psychology for teachers course

In teaching management in psychology for teachers integration of participatory learning in teaching and learning has been integrated. Using group processes and role play: [4]

1. Experience stage: The instructor talks to the learner about the special needs children encounter in everyday life. Encourage students to share their experiences.

2. Steps have the reflection: The instructor opens a video for children with special needs in each category and lets the students exchange information about the video content. Then divide the group by the type of children with special needs into 8 groups and then research. Talk about issues in short-term teaching and then give each group a presentation. By a classmate in class, a discussion is held to assess cognition.

3. Step up the idea: Instructor summarizes the content. And summarize the ideas from the discussions and presentations of each group

4. Step to experiment or apply: Each group offers content about children with special needs in that category, the self-responsibility group with the theme of role play.

At the end of the lesson, the instructor brief summary of children with special needs in each category. From watching the role played by each group.

OBJECTIVES

This article aims to (1) bring a participatory learning process to use in teaching psychology for teachers course, (2) discuss the advantages of participatory learning management in teaching and learning in the field of psychology for the teacher.

DESING PROCESS

The process of screening the knowledge to be used in the learning management the author has conducted a knowledge screening by using knowledge management (KM).

Knowledge Management Process

Step 1: Knowledge Identification

At this stage, it is the processing of knowledge about theories, principles and definitions of participatory learning management. It combines the knowledge gained from such resources as educators. From academic articles Based on research results. And synthesize it into information.

Step 2: Knowledge Creation and Acquisition

At this stage, the information from various reliable sources, for example, from a thesis / dissertation database system from the research database and from the books.

Step 3: Knowledge Organization

At this stage, all data will be analyzed. Then extract the knowledge. To be consistent And cover all the knowledge. Then the information is synthesized into categories, categories, or related topics to facilitate the implementation.

Step 4: Knowledge Codification and Refinement

In this step, the knowledge gained from Step 3 is considered and easy to understand the application.

Step 5: Knowledge Access

At this stage, it will be a form of knowledge in the form of a textbook, book or e-book for easy access to information.

Step 6: Knowledge Sharing

Step 7: Learning

The author uses the knowledge management process, finally, the form of participatory learning management.

RESULTS

Participatory learning is a student-centered learning-based learning management system. It consists of 4 steps: Experience, Reflection and Discussion, Concept, and Experimentation /Application). The teaching and learning management in the field of psychology for teachers use participatory learning to enhance learners' learning by helping students participate in the forum be responsible for their own learning and practice their group activities, which allows learners to link their original experiences with new knowledge. It's very learner-centered Process of "discovery" builds self-esteem. Learning is more fun for students, teaching more fun for leaders/teachers. Participate in a discussion of issues that are learning processes that enable learners to develop critical thinking skills Communication skills and problem solving skills.[5]

ACKNOWLEDGMENT

The author would like to thank the Suan Sunandha Rajabhat University, Bangkok, Thailand for financial support.

DISCUSSION

Participatory consists of 4 steps: Experience, Reflection and Discussion, Concept, and Experimentation/Application). The author has taken Participatory Learning to use in teaching psychology for teachers. And consistent with Bruce Missingham (2014)[6] bringing critical pedagogy and participatory learning approaches into postgraduate university classrooms in teaching about water and sustainable development. and participatory approaches offer ways of escaping conventional lecture and tutorial approaches to pedagogy in university, strategies for incorporating and sharing student knowledge and experience, engaging students in the production of theory and knowledge (and not just their consumption), and problem-posing approaches that encourage critical thinking and creativity.

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THE DEVELOPMENT OF ONLINE ADMISSION FOR GRADUATE STUDENTS, SUAUN SUNANDHA RAJABHAT UNIVERSITY

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ABSTRACT

In reference to the results of knowledge exchange among members of education service group including personnel responsible for student enrollment in such offices as Academic Services, College of Innovation and Management, School of Graduates, and Demonstration School, the online admission system for undergraduate students is a key factor for the increase of the number of student enrollment. The purpose of this study is, therefore, to develop the online admission system for graduate students to satisfy service users. Method of the study includes setting up knowledge exchange group including personnel responsible for student enrollment from Education Service Unit, and Faculties/Colleges to pass on experiences and exchange knowledge to gain techniques and knowledge for the efficient development of online admission system for graduate students satisfying service users. The research results include guidelines for administrators and related persons to make use of the innovation and technology for the improvement and development of efficient online admission system for graduate students which could increase the number of graduate students.

Knowledge Cycle Management Process From the production of knowledge. Bring knowledge to the store. Bring out And use that knowledge to benefit the organization as follows.

1. The system to recruit candidates. Graduate level Through the Internet. Can be a channel that applicants must access through the University website. To increase the number of visitors to the site, which affects the ranking of universities from the "Webometrics Ranking of World Universities" or "Ranking Web of World Universities" and meet the University's policy and direction. On the topic of being a university 1 of Rajabhat.

2. Admission System Graduate level Through the Internet, the database is designed to be used to plan student admissions. Plan the examination And can report the number of candidates immediately.

3. Admission System Graduate level Through the Internet. Where the agency can Bring knowledge to those who are interested in applying. Graduate level It is a better development process. From the original self-examination. Developed to use the Internet to help. Reduce the procedure. Reduce the length of your application. Quick and easy to pay. Both practitioners. And target customers Quick access to applicant information.

Keywords: Online Admission System, Graduate Level, Suan Sunandha Rajabhat University

INTRODUCTION

Educational Service Office includes 6 units, namely 1) Curriculum and Instruction, 2) Student Enrollment, 3) Registrar, 4) Internship Training, 5) Grade Results, and 6) Validation of the Educational Completion and Degree Approval including important educational documents. However, due to the needs to develop efficient online admission system for postgraduate level, Education Service Group is formed. The group members include personnel from 13 units, namely 1) Education Service Unit, 2) Faculty of Science and Technology, 3) Faculty of Humanities and Social Sciences, 5) Faculty of Fine Art, 6) Faculty of Management Sciences, 7) Faculty of Education, 8) College of Graduate Studies, 9) College of Innovation and Management, 10) International College, 11) College of Logistics and Supply Chains, 12) Learning Center, Nakhonpathom Province, and 13) Demonstration School, Suan Sunandha Rajabhat University. The members of the group have jointly uncovered lessons from members with high experiences and skills to gain tacit knowledge for knowledge exchanging, which is the development of the online admission system for postgraduate level. The screening of new students in postgraduate level is important to allow qualified candidates base on the curriculum to further their study at School of Graduate, Suan Sunandha Rajabhat University. The online admission system for postgraduate level is developed by using problems found in the online admission system for undergraduate level to improve the present function efficiently.

OBJECTIVE

1. To develop the online admission system for postgraduate level, Suan Sunandha Rajabhat University

2. To increase the efficient channel for student enrollment, postgraduate level, Suan Sunandha Rajabhat University

3. To employ knowledge gained from the development of online admission system for postgraduate level, Suan Sunandha Rajabhat University in further research

RESEARCH SCOPE

3.1 Scope of area includes the online admission system for postgraduate level, Suan Sunandha Rajbhat University @ www.reg.ssru.ac.th

3.2 Scope of content include the overall development of the online admission system for postgraduate level, Suan Sunandha Rajabhat University. The details are as follows;

3.2.1 creating database of candidates for postgraduate level in the system

3.2.2 activating the online admission system

3.2.3 writing a report concluding the number of candidates paying for the admission fee to arrange written test, interview test, and practical test

3.2.4 conducting the interview test to screen newstudents

3.2.5 registering new students

3.3 Scope of time for knowledge exchanging concerning the online admission system for graduate level, Suan Sunandha Rajabhat University (From April – September 2017)

RESEARCH CONCEPT

To exchange knowledge concerning the development of online admission system for postgraduate level, Suan Sunandha Rajabhat University, group members have reviewed related literature, notions, theories, and researches to gain research guidelines as follows;

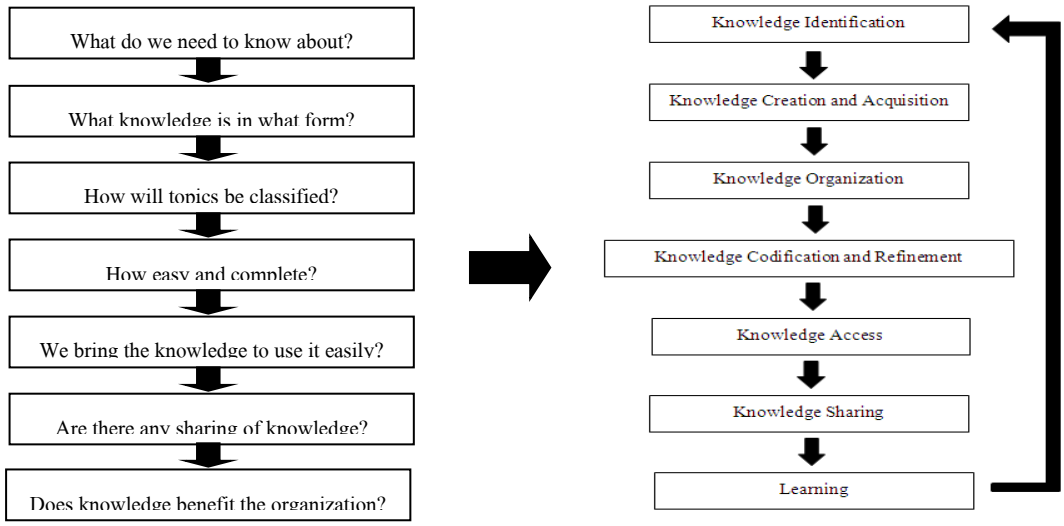


Figure 1. Knowledge Management Process [2]

The process is one that will help organizations understand the steps that caused the knowledge management process. Or for the development of knowledge that takes place within the organization consisting of seven steps.

1. Knowledge Identification - It is considered that the vision / mission / goal is to achieve a goal. We need to know, Now we know what, In any form, Is one.

2. Knowledge Creation and Acquisition - The creation of new knowledge, Knowledge from the outside, Keeping the old knowledge, Get rid of knowledge is no longer valid.

3. Knowledge Organization - A structured knowledge to prepare for the retention of knowledge. The future system

4. Knowledge Codification and Refinement - Improve the standard document format, Using the same language, Content update is complete.

5. Knowledge Access - It gives users access to the knowledge that they are looking for simple and easy as information technology (IT), Web board, The board's publicity.

6. Knowledge Sharing - How many cases are done by Explicit Knowledge may be documented, knowledge, information technology or may be made in case of Tacit Knowledge Systems. Cross-functional teams, quality and innovation activities, community learning, mentoring system, the switching tasks, Loans, the exchange of knowledge.

7. Learning - Should make learning part of the job. Causes the system to learn from Knowledge, the knowledge to use, to learn and experience new and renewable on an ongoing basis.

Admission system can be defined as follows;

Jaitip Cheauratanapong, (2007: p. 5) states that admission system can be defined as online admission system which is a complete system covering from student enrollment to reporting oneself as a student designed for university admission in various educational levels. [3]

Suwit Hirunkan and et al, (2008: p. 60-61) defines as the collection of various parts of the system with internal relationship and interaction, and the parts will work together as one to achieve the targeted goals. [4]

Related Research

Aphichart Kampoomprasert, (2015) conducted the research entitled the students' satisfaction of choice of study in undergraduate level, Faculty of Management Science, Suan Sunandha Rajabhat University (SSRU). The research purposes are to study and compare the students' satisfaction of choice of study in undergraduate level, Faculty of Management Science, SSRU. Samples selected by simple random sampling include 242 undergraduate level students, Faculty of Management Sciences, SSRU, academic year 2016 based on Krejcie and Morgan Table. Research tool is a questionnaire with Reliability Test using Cronbach's Alpha coefficient at .945. Statistics employed include Percentage, Mean, and S.D. The comparison of the students' satisfaction of choice of study in undergraduate level, Faculty of Management Sciences, SSRU classified by gender and educational qualifications, is analyzed by using Independent t-test, and One-way analysis of Variance, respectively.

The research findings are as follows;

1. The overall and item-analysis level of the students' satisfaction of choice of study in undergraduate level, Faculty of Management Sciences, SSRU, is in high level. The items with high mean scores ranging from high to low include the University's image, the welfare and services, public relation, and values, respectively.

2. The results of comparing the students' satisfaction of choice of study in undergraduate level, Faculty of Management Sciences, SSRU disclose that there is no statistical differences in overall level and item-analysis level of satisfaction among students with different gender and educational qualifications. [5]

METHODOLOGY

Data analysis

1.The process of online admission system of graduate level is refined and exchanged under the supervision of specialists by group members.

Figure 2. Focus group

2. Focus group was held for knowledge exchanging concerning the online admission of undergraduate students by group members.

Figure 3. Focus group

The results of focus group point out that the use of online admission system of undergraduate students for 3 years is convenient and fast. This leads to the increase of the applicants year after year. However, the traditional admission system of graduate students causes lots of problems. For example, the applicants who mostly are from upcountry spent more expenses on travel cost, and the lack of information about the university admission. This leads to the under-number of applicants which is behind the target. The online admission system for graduate students is, therefore, proposed to solve these problems. That is because the online system allows applicants to apply online by paying fees at any local bank, and this solve the problem concerning time and travel expenses.

Guidelines for the development of the online admission system for graduate students are as follows;

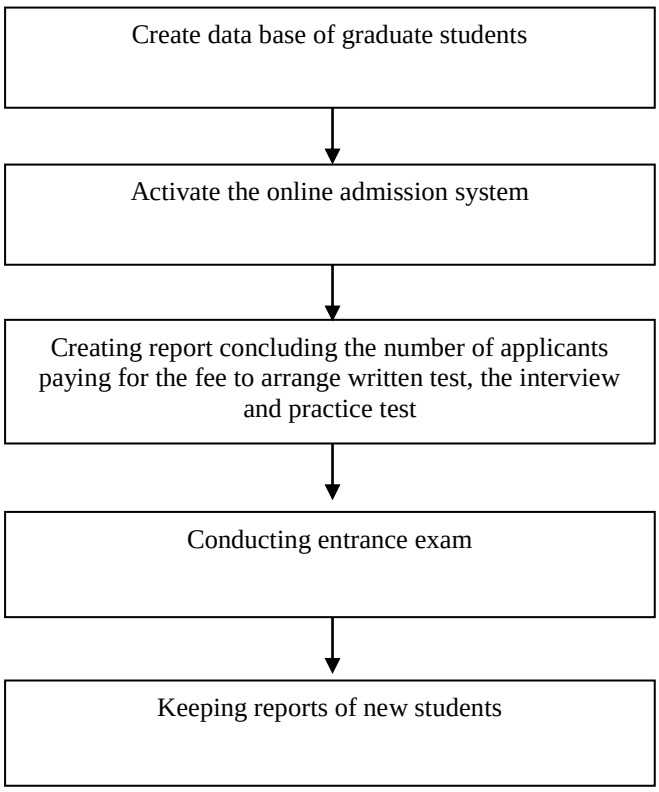
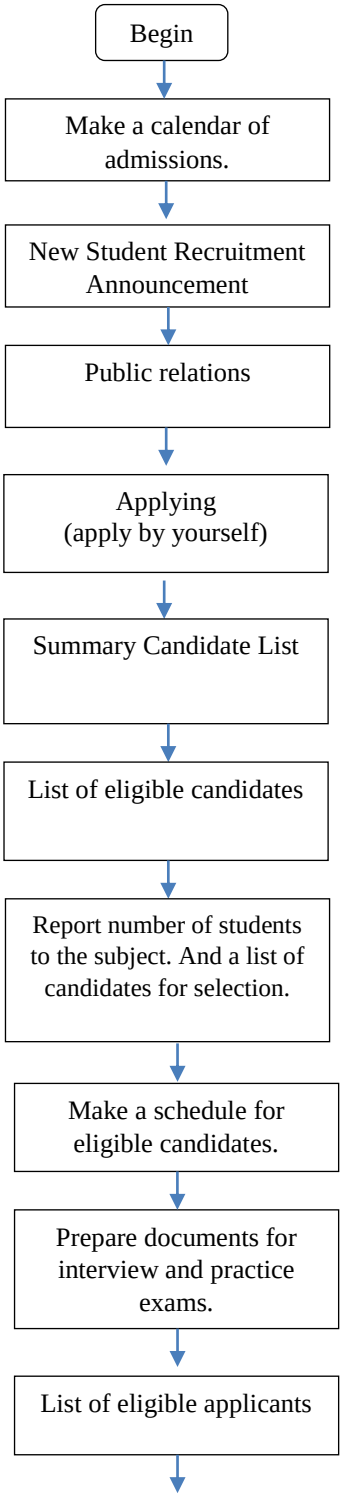
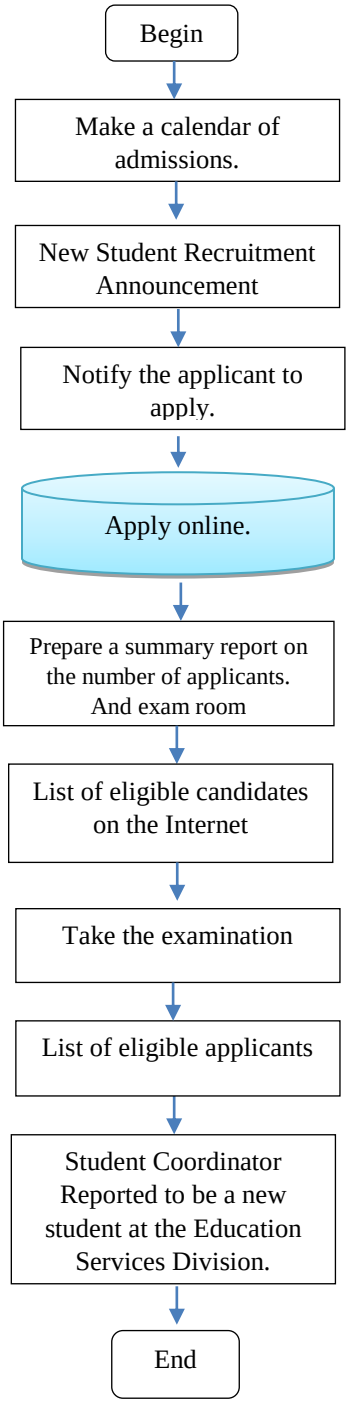
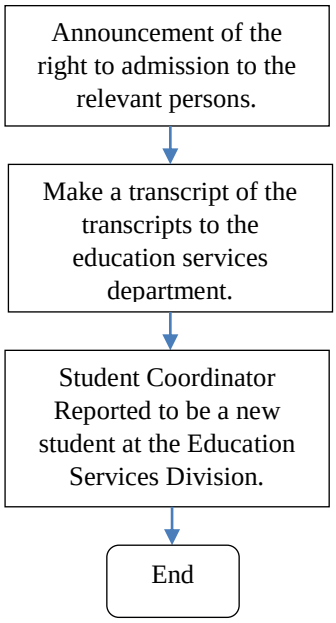


Figure 4. Guidelines for the development of the online admission system for graduate student

CONCLUSION

By exchanging lessons, the knowledgeable group has adopted the process / practice. In developing a new recruitment system. Graduate level (Via the Internet) can summarize the results of the exchange of learning in a new way.

The original process (Before learning)	New process (After learning)	Process Improvement Things
		1 . Create a database of graduate applicants in the system. 1.1. Applicant Type 1.2. Fields of application 1.3 Payment Information Transfer Menu 2. Report the number of applicants who pay the subscription fee. To arrange exam room and interview 2.1 Menu Room Interview Interview 2.2 Menu list of eligible candidates on the Internet. 3. Examination 3.1 Recording menu 3.2 Menu list of people eligible to study on the Internet. 4. Report the new student. 4.1 Menu Create a database to fill in the history of new students on the Internet.

The original process (Before learning)	New process (After learning)	Process Improvement Things
		

Group members have made use of the procedure and problems found in the online admission system for undergraduate students as guidelines for the development of the online admission system for graduate students. However, problems found after the use of the system include the delay in completing the information, the instability of the system, the unqualified candidates whose educational qualifications are not in line with the criterion, and the unfinished data completion. These problems are improved and solved by Education Service Unit. For example, a new server is required for mass users to prevent delay of the system speed, and only candidates with suitable educational qualifications specified by the University will be allowed to access the system. Moreover, a user-friendly handbook for the system will be provided to facilitate users of the online admission system for graduate students.

ACKNOWLEDGMENTS

The author would like to thank the Research and Development Institute, Suan Sunandha Rajabhat University, Bangkok, Thailand for the financial support.

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KNOWLEDGE MANAGEMENT FOR THE GUIDELINES OF INFORMATION RESOURCE ACQUISITION: A CASE OF ACADEMIC RESOURCE CENTER, SUAN SUNANDHA RAJABHAT UNIVERSITY

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ABSTRACT

Knowledge management for the guidelines of information resource acquisition to support the teaching and learning of Suan Sunandha Rajabhat University is a key factor to motivate faculty members to involve in providing suggestion of new information resources to the Center, and to allocate budget effectively for purchasing new resources. The process of knowledge management is conducted for knowledge and experience exchange among personnel responsible for information resource acquisition and the Center's users. The findings disclose guidelines for suitable information resource acquisition for the Academic Resource Center which can be divided into 2 aspects, namely 1) providing more channels for users to propose information resource to the Center, and 2) allocating budget covering expenses of all faculties in the university.

Keyword: acquisition, guideline development, information resource, knowledge management

INTRODUCTION

Since Higher Education has been responsible for developing work force, academic and careers as well as conducting research, Higher Education Institutions include learning resources in different fields of study. [1] University libraries as learning resources provide services, and support the teaching and learning of faculty members and students to produce the graduates with quality. Higher Education Institutions should, therefore, pay great emphasis on library operation in terms of providing up-to-date academic resources with modern and various information resources and speedy services for library's users. [2] Libraries are regarded as learning resources supporting formal education both in curriculum and extra-curricular activities paying attention to fostering and encouraging reading habits, and information retrieval skills. Libraries in Higher Education Institutions are, therefore, responsible for supporting learning and instruction, conducting researches, preserving art and culture and providing academic services for Higher Education Institutions and society including self-studying and life-long learning. [3] University libraries, therefore, pay vital role in developing educational institutions, and learning and teaching to achieve target goals.

In Suan Sunandha Rajabhat University, the Academic Resource Center is under Office of Academic Resource and Information Technologies responsible for supporting learning and instruction, and acquiring information resources as required by Thailand Quality Framework of various curriculums of the University. [4]

The acquisition of information resources is important to support the teaching and learning so that various text books, journals, and information resources in required fields of study based on the curriculums of the University are available for faculty members as well as students to use in teaching, learning conducting researches, and writing academic text books.

However, in the past 3 years, there have been 2 channels of information resource acquisition, namely

1) by e-office, and 2) by direct contact at the Librarians. It is found that there are very few cases of the acquisition by direct contact at the Librarians comparing to the budget allocated for the purchase of information resources for all faculties in the University. The cause could be the library users' unaware of the channel of the information resource acquisition leading to the lack of cooperation from the users, and the users' dissatisfaction of resources available in the Academic Resource Center because the acquisition is not from the users' needs. Moreover, in terms of the proposal of the acquisition of information resources by users, incomplete information of the resources, namely the lack of book titles, writers, ISBN no. and too broad topics of books leads to the delay of the acquisition and the acquisition of books not needed by users.

It is therefore necessary to solve these problems by using the process of knowledge management to find out necessary knowledge concerning the library's information resource acquisition.

KNOWLEDGE MANAGEMENT FOR GUIDELINES OF LIBRARY'S INFORMATION RESOURCE ACQUISITION

Knowledge management is a process of gathering knowledge available in the organization separately in particular persons or documents so that everyone in the organization can access to the knowledge for self-development including efficient working operation leading to the organization performance's best practice. Knowledge management, a process enabling knowledge development or knowledge management in the organization, includes 7 steps as follows [5],

1. Knowledge Identification is the consideration of the vision, mission, strategies, and goals of the organization, and methods to achieve the goals, the available knowledge at present with its form and its location.

2. Knowledge Creation and Acquisition is the creation, acquisition of both internal and external knowledge, the preservation of the original knowledge, and the extraction of the unused knowledge.

3. Knowledge Organization is the specification of the knowledge structure classified by its types for convenient information retrieval and access.

4. Knowledge Codification and Refinement is the improvement of the document forms in the same standard and language with complete contents.

5. Knowledge Access is enabling knowledge users to access to the knowledge easily and conveniently by using IT system, Web Board, and PR board, etc.

6. Knowledge Sharing is sharing which can be done in many different ways. In terms of explicit knowledge, this knowledge could be in the form of documents, and IT database, while in terms of tacit knowledge, the knowledge could be in the form of cross work-line team system, quality and innovation group activities, learning community, mentor system, exchanging job, visiting personnel, knowledge exchanging stage, etc.

7. Learning is the use of knowledge in decision making, solutions to problems, and making the knowledge as part of work leading to the continuous cycle of learning from knowledge creation, knowledge application, and insight into learning as well as new experiences.

The 7-step knowledge management process has been employed in creating the guidelines for Information Resource Acquisition of SSRU Academic Resource Center by specifying knowledge, creating and acquiring knowledge through various activities, namely Knowledge Share, Focus Group. In terms of Focus Group, the meeting of group members of Knowledge Management, and the library users including the faculty members is organized to analyze and find out guidelines for information resource acquisition suitable for the context of the Academic Resource Center, SSRU. The guidelines can be divided into 2 parts as follows;

1) The addition of survey channels of the needs of books

This enables the faculty members to easily and conveniently propose lists of more and more required books. In the past, 2 channels of information resource acquisition of the Academic Resource Center, namely

1) e-office, and 2) direct contact with the librarians, are available. However, the new process of the acquisition include 5 channels as follows;

1. Users' need analysis through e-office system

2. Users' need analysis through online web sites system

3. Users' proposal of the required books at book shops. In this way the needed lists of books will be passed on to the librarians for validation. In case the lists are already available in the center, the lists will be rejected and the notification of rejection will be forwarded to the sender. However, in case the lists are not available in the center, the purchase will be conducted in the near future.

4. Users' proposal of the needed books submitted at library@ssru.ac.th

5. Users' direct contact at the librarians to find out the available lists of books before proposing the needed books to the center.

2) Budget allocation covering all faculties in the University

This kind of budget allocation includes notification to all faculties through circulation letters, e-office, e-mail concerning budget allocation based on the numbers of students and the allocated budget together with requirements, namely 1) duration of the proposal of the needed book lists, and 2) in case of no proposal of the needed books, the Center will purchase other suitable books instead. This enables faculty members of each faculty to be aware of the amount of the allocated budget so that the estimated costs of the needed books could be considered, and details of the channels of information resource acquisition allow the faculty members as well as the librarians to manage the acquisition conveniently and cost-effectively.

The guidelines of information resource acquisition through knowledge management with its outcome are shown in Table 1 as follows;

Table 1

The guidelines and outcomes of the use of knowledge management for information resource acquisition

Knowledge of information resource acquisition	**Outcome**
1. The addition of channels for book proposal for acquisition 1) Users' need proposal via e-office 2) Users' need proposal via online websites 3) Users' need proposal at book shops before the book shops' proposal to the librarians 4) Users' need proposal via library@ssru.ac.th 5) Users' direct need proposal at the librarians	1) Faculty members can propose lists of needed books to the librarian in different channels depending on their preference and convenience. 2) The increase of book proposals for acquisition based on needs 3) The faculty members gain the books they really need. 4) The increase of books serving the needs of faculty members 5) Chances for every faculty member to propose the needed books for acquisition are open freely.

2. Specifying methods and requirements of budget allocation for each faculty 1) Allocating budget based on the numbers of students in each faculty 2) Estimating percentage of allocated budget for each faculty 3) Notifying the approval of budget for the purchase of books and textbooks to each faculty by circulation letters with requirement and duration of the submission of book proposals	1) The efficiency of budget management for information resource acquisition in the center 2) The coverage of budget allocation in all faculties 3) The prevention of the lack of coverage of budget allocation in all faculties 4) The faculty members' awareness of the budget approved for the purchase of the needed books and textbooks

CONCLUSION

In the past 3 years, there have been problems concerning the acquisition of information resource in the Academic Resource Center, SSRU. The causes of problems include the lack of cooperation from faculty members in proposing lists of needed books and text books for the librarians to continue the information resource acquisition. Moreover, the incomplete proposal of the needed lists of books and information resources leads to the delay of the acquisition and the users' dissatisfaction of the available resources. However, the use of Knowledge Management for guidelines of information resource acquisition has been conducted by group members of Knowledge Management and the Center's users including faculty members through Knowledge Share and Focus Group activities. The outcome of Knowledge Management includes guidelines for the information resource acquisition consisting of 2 aspects, namely 1) to increase the survey channel of the needs of information resources, and 2) to find out effective ways to allocate budget covering all faculties in the University. Knowledge Management can, therefore, be used to solve the operating problems in the University.

ACKNOWLEDGMENTS

The authors would like to thank Suan Sunandha Rajabhat University for scholarship support. I would like to thank my director for suggestions and all their help. The study is not possible without the data from librarian, library's staff and library users. In addition, I am grateful for my co-worker for them invaluable help and constant encouragement throughout this of study Finally, I most gratefully acknowledge my parents, my teacher and my friends for all their support throughout the period of this study.

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DEVELOPMENT OF THE "I" SYSTEM FOR THE CORRECTION OF INTERNET LEARNING VIA THE INTERNET SUAN SUNANDHA RAJABHAT UNIVERSITY

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ABSTRACT

Knowledge exchange on the system development on incomplete grade change via the online channel conducted by academic service group / academic report sub-section aimed at 3 aspects: 1) to develop and improve the process / operation of personnel; 2) to develop system concerning incomplete grade change; and 3) to apply the results found to improve routine responsibility leading to research work. The method was based on group meeting to consider acquire knowledge for operational process. The group was from 7 units – 1) Academic Services Department; 2) Faculty of Management Science; 3) College of Innovation and Management; 4) College of Logistics and Supply Chain; 5) Nakon Pathom Academic Service Center; 6) Faculty of Fine Arts; and 7) Faculty of Humanities and Social Science. The group was then design the system and proposed to experts for review and suggestion.

The problems and barriers found consisted of the long steps of changing incomplete grade from filling the form, submitting to the faculty, and gathering all forms submitted to the office of registrar. These created the delay, in particular, when the large number involved. The group made a consensus in applying technology to resolve the spectacles. Therefore, the incomplete grade could be changed via the online channel to reduce the time wasted along the complicated process, and the number of paper.

Keywords: system development, grade result, Suan Sunandha Rajabhat University

INTRODUCTION

The academic service group consisted of 6 chambers – curriculum and instruction, admission, registration, on-the-job training, academic report, graduation inspection, degree approval and academic documents. The incomplete grade change operation deals with supporting staff. The cooperation to find the solution for the delay of incomplete grade change was formed, having staff from 1) Academic Services Department; 2) Faculty of Management Science; 3) College of Innovation and Management; 4) College of Logistics and Supply Chain; 5) Nakon Pathom Academic Service Center; 6) Faculty of Fine Arts; and 7) Faculty of Humanities and Social Science.

Similar to all colleges throughout the world, the incomplete grade change could be done with the next academic semester / term. The tradition process took time and caused a delay. The group members decided to employ technology to help solve the problem mentioned, in particular to save time, which was in line with the university policy in terms of technology application for efficiency improvement.

In addition, academic report sub-section has constructed the knowledge management specified by the university, serving the first strategy "Develop the university to become sustainable niche guru." This also responded to the university's goal in terms of management with good governance.

OBJECTIVE

1. To develop and improve process / operation of Suan Sunandha personnel
2. To develop incomplete grade change (I) via online
3. To employ the result as a guideline for routine development to research

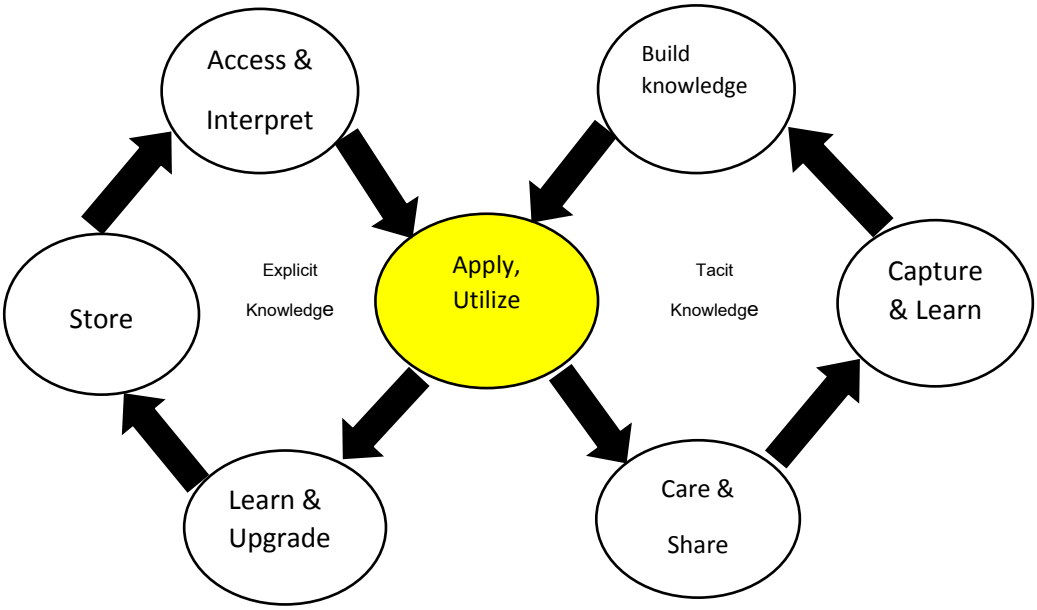
RESEARCH SCOPE

1. In terms of area, the knowledge exchange focused on the development and improvement of system / operation on the incomplete grade change (I) via online of Suan Sunandha
2. In terms of content, basic information, the action, output and outcome were focused overall
3. In terms of time, the action was conducted in 2016 fiscal budget year, during October 2015 – September 2016.

RESEARCH CONCEPT

Knowledge Management Theory

Surachart Maleesri (2013) described that knowledge management known as KM was a tool for achieving at least 3 circumstances: work, personnel development, and organization. As a result, knowledge management was not for its goal. If this concept was not clear, it could create fake knowledge management. Knowledge could be classified into 2 groups: Explicit knowledge – knowledge found in documents, text, operation manual; and Tacit knowledge – knowledge embedded in people via experience and wisdom. The two has different way of management. Explicit knowledge concentrated on accessing to resource, examining, interpreting, in which new knowledge was constructed, and the conclusion / results would be employed as reference (left circle). On the other hand, tacit knowledge concentrated on sharing, leading to new knowledge construction, in which all members could apply for individual work. [1]



Evaluation and Measurement Theory

Gronlund & Linn (1990: 5) defined that measurement is a process that describe the level of differences among individuals by number. [2]

Boontham Kitpreedaborisuth (2000:15) defined that evaluation was a process for judging the value of something based on certain criteria. [3]

Process development Theory

Edwards (1985:20) described the circle for development as follows:

1. System Analysis – was the process that happened after a request or need was raised in order to improve the system. A feasibility study had to carefully focus before designing new system.

2. System Design – was the process that designed the appropriate specifications of relevant system / program prior the use of prototype.

3. System Development –b was the last process of the system circle. The inspection and evaluation were required for the completion of system before introducing to the users. [4]

Related Researches

Somdech Rungsrisawat, (2015) This research aimed to study, search, analyze, and find the correlation of factors thataffect the image and brand of tourist attraction at Amphoe Bang Khonthi, Samut SongkhramProvince, include searching and participating of citizens at Amphoe Bang Khonthi. And toupgrade Amphoe Bang Khonthi as a tourist attraction for sustainable tourism. The research combines both quantitative and qualitative research with the sampling tourists at Amphoe Bang Khonthi of 400 people, natives of 70 people, community leaders of 16 people, and experts in marketing communications and travel of 3 people.

The result found that the people perceptions are peaceful nature, quietness, not crowded, not fake, delicious food, cheap product prices, and friendliness of local people. The perception for brand is ecological agriculture (Agro-brand) which focused on lifestyle gardeners suffice.

Factors contributing to the creation of image and brand at Amphoe Bang Khonthi found 3 main factors: 1. magnet of attraction particularly naturalness 2. transportation and convenient access and 3. to

recognize the target tourists. Despite the model analysis software “LISREL” found that the perception of “brand” and “satisfaction” to Amphoe Bang Khonthi has the direct impact on loyalty in tourism destinations at Amphoe Bang Khonthi.For the perception of “image” resulted indirectly impact through brand awareness and satisfaction with the tourist at Amphoe Bang Khonthi. Therefore, it can clearly say that branding in a tourist target consumer is particularly important.

The participation of citizens in Amphoe Bang Khonthi found that most people do notengage in communication and image building and branding of Amphoe Bang Khonthi. It can be said that citizens participate indirectly by selling goods with friendly prices and give good services to tourists.

To upgrade Amphoe Bang Khonthi to a national tourism and has sustainable tourism, the result found that, it is possible because there are many tourist attractions and famous selling points. This should focus on the brand in 3 groups: 1. Tourism history/historic/archaeological-remains 2. floating market tourism 3. agro-tourism. All of this,all mechanicals must drive together particularly high ranking government officers must help pushing this matter. People in the community and vendors have helped to create for people in the community to earn the business of tourism that is sufficient to sustainable life.

The discussion has found an interesting characteristic which is Brand Bang Khonthi "Amazing Number 4 Bang Khonthi, the way of Thai" 4 markets, 4 temples, 4 fruit gardens, andupgrade into national tourist attraction especially since Bang Khonthi is a tourist attraction that not "perfunctory". **[5]**

Aumpai Yongkulvanich, et al. (2011) revealed the results of their study concerning model development for grading and grade submission via IT system at Ubon Ratchathani Rajabhat University that the faculty members responded to the new model at a high level. The model consisted of grading, submission, and grade filing. The system was inspected and verified via reference and confirmation codes. **[6]**

METHODOLOGY

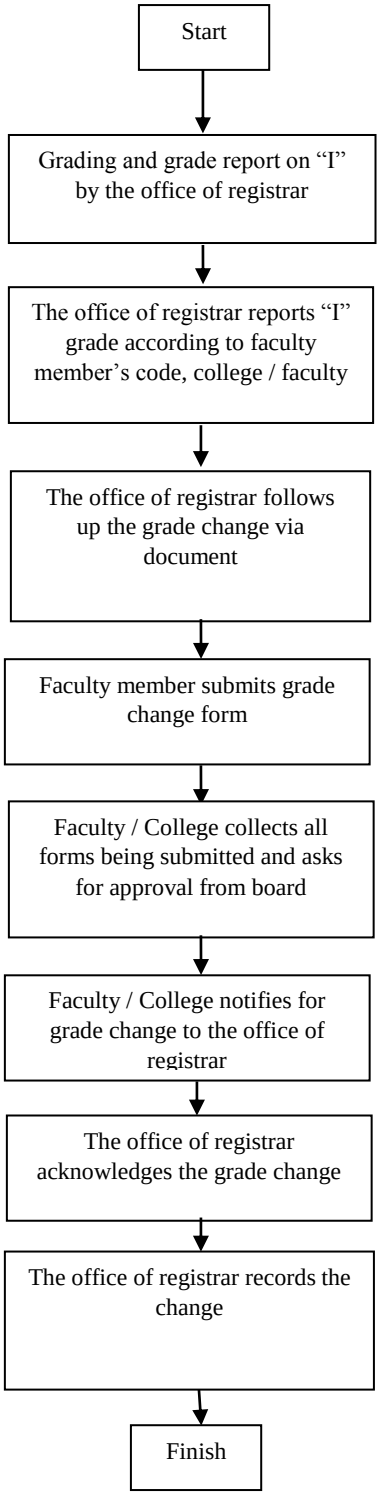
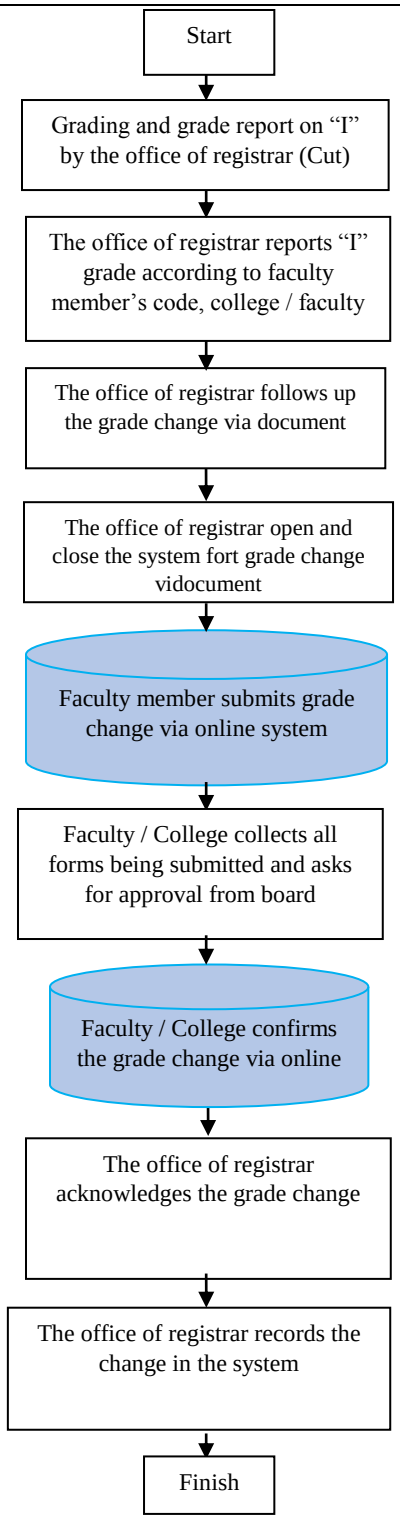
Data Analysis

The academic report sub-section has specified the knowledge on process development on incomplete grade change via online channel. The meetings among group members were set occasionally, beginning from flow chart comparison between the conventional and traditional models. The new system was designed and improved from time to time, and finally approved by members. The model was sent to specialists for approval and comments. The final model was completely set and ready for applying.

Conclusion

The knowledge exchange on the system development on incomplete grade change via the online channel was conducted occasionally through steps – meeting for understanding making, small group meeting, lesson-learned analysis, leading to knowledge which could resolve the problem with comfort and convenience.

Conventional and Traditional Comparison

Traditional process	Conventional Process	Improvements
		1. Identify the open and close system date according to academic calendar 2. Faculty member submits grade change via online system and notifies to faculty / college 3. Faculty/College issue a summary report on the correction of the results of the study to request that the meeting approve the correction of the results and confirm the resultsin the Internet 4. Faculty / College confirms the grade change via online system with approval from board 5. Vice-president for academic affairs approve the grade change; the office of registrar puts the change to the system 6. Grade change forms / document concerned are not required

The results after applying and implementing this model were that: the operation process was shorter; the time employed was reduced; the amount of document filing was very lower; and the efficiency and effectiveness were higher.

ACKNOWLEDGMENTS

The author would like to thank the Research and Development Institute, Suan Sunandha Rajabhat University, Bangkok, Thailand for the financial support.

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[3] Boontham Kitpreedaborisuth. (2000:15). Learning Evaluation and Measurement. via http://dc.oas.psu.ac.th/dcms/files/04582/Chapter2.pdf, PP 15

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[5] Somdech Rungsrisawat, (2015). The Development of Image and Brand Communication for TouristDestination in Bang Kontee District Samut Songkram Province based on the Principle of Creative Economy and Sustainable Community Participation.

[6] Aumpai Yongkulvanich, et al. (2 0 1 1) The IT Model Development for Grading and Grade Submission: A Case study at Ubon Ratchathani Rajabhat University.

TECHNIQUE OF FOLLOW UP ON WORK PROGRESS IN OFFICE ADMINISTRATION

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ABSTRACT

Follow up on work progress in office administration can be conducted by using lots of techniques, namely via social media including Line Group and Facebook, verbal follow up, follow up via meeting, telephone, memo, e-office, follow up sheet, documents and filing. However, lots of problems found in the use of these techniques include the delay in operation, the lack of follow up and documents, and time consumption leading to the delay of work submission or the ignorance of work. The purposes of this study are to find out follow up on work progress technique in office administration, and to study the effectiveness of this technique. Research procedure is Knowledge Management steps including brainstorming, and knowledge exchanging conducted by Chief of Office Group. The research result discloses follow up on work progress technique by using Excel Form. Moreover, the results of the implementation of the Excel Form in follow up on work progress disclose 95 percent of the reduction of follow up times, 100 percent of the error reduction, 2.5 percent of the delay in work submission, and 100 percent of the work done. The use of Knowledge Management, therefore, leads to the process improvement called 'the Follow up on work progress technique by using excel form', and the process increases the work efficiency.

Keywords: work efficiency, office administration technique, follow up on work progress, form, process

INTRODUCTION

Chief of Office Group in the room of 'Techniques for office administration' conducted Knowledge Management based on the University's guidelines by organizing meeting of knowledge exchange, knowledge refining, and implementing the knowledge gained concerning follow up on work progress in office administration to reduce operation time, to improve work outcome, and to create innovation for office administration.

Based on the knowledge exchange of Chief of Office Group, the topic of discussion includes 'Office Administration Techniques.' The Group refined the tacit knowledge from each member by allowing each member to tell the best technique of follow up on work progress, and then the group replies are collected and analyzed by using frequency of the replies. The results of this activity point out that the most frequently used technique of follow up on work progress in office administration is using social media, namely Line and Facebook, followed by Verbal follow up, meeting, telephone, memo, e-office, and follow up sheet, respectively. The follow up technique used the least is document and filing. After that 5 techniques, namely social media, verbal follow up, telephone, memo, and e-office are chosen to discuss about the advantages and disadvantages of these techniques by emphasizing the factors concerning economizing resources. It is found that these techniques cause lots of problems, namely the delay in operation, the lack of follow up, the lack of proof of documents, and time consumption. This results in the late submission of work, or the ignorance of work.

OBJECTIVES

1. to find out follow up on work progress technique in office administration
2. to study the efficiency of this technique

METHODOLOGY

Population and Samples

22 members of Chief of Office from 22 government units in Suan Sunandha Rajabhat University

Research Procedure

Procedure employed in finding out knowledge concerning "Technique of Follow up on Work Progress" includes Knowledge Management to find out tacit knowledge relevant to best way for follow up on work progress in office administration. The details of the procedure are as follows;

1. Create 'Chief of Office Group' including all chiefs of office from all faculties in the University.

2 . Conduct knowledge exchange among group members under the topic of Office Administration Techniques.

3 . Conduct meeting to exchange knowledge by reviewing and extracting tacit knowledge from each individual member concerning one's own job responsibilities.

4 . Refine the collected knowledge to gain knowledge concerning 'The Best Technique of Follow up on Work Progress in Office Administration' so that the technique can be employed in office administration.

Research Results

To solve the problems of using original techniques in follow up on work progress, the Group conducted the knowledge exchange among group members to find out new technique of follow up on work progress in office administration, and the result is using 'Excel Form' in follow up on work progress. The table below shows the comparison of the original techniques and the new technique.

Problems of original techniques	Expected outcome of the use of Excel Form
• The delay in operation	The reduction of late operation
Lack of follow up due to lack of proof of documents	• The efficiency of follow up due to clear proof of documents
• Time consumption	• Time saver due to IT
• Time consumption in reproduction	Time saver due to continuous operation

The use of Excel Form or the form taken from Microsoft Excel in follow up on work progress in office administration enables the online record of work performance of each individual officer. The form can be forwarded to the officers immediately and conveniently. Moreover, the development of the form for follow up on work progress into information technology system will reduce the time consumption of follow up greatly. This leads to the increase in the efficiency of work performance, and the reduction of problems caused by using original techniques.

The conclusion of process improvement of follow up on work progress technique taking from knowledge refinement conducted by group members is shown in the table below.

Techniques needed to be improved	Improved technique

Techniques: **Follow up on work progress in office administration through;**	**Follow up on work progress in office administration through;**
• Social Media	Excel Form
• Verbal follow up	
• Telephone	
• Memo	
• E-office	

The implementation of knowledge gained from Knowledge Management

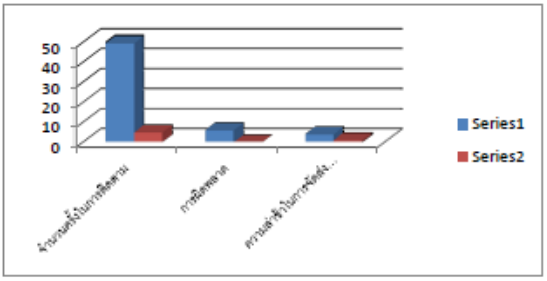
The group members employ follow up on work progress in office administration through the Excel Form in their office for 1 month.

Schedule of assignment and monitoring of office administration
Department.....

Name	Date	Job	Deadline	Transaction classification				Performance		Question	note	results of assignment
				Number of follow-ups	Error	Delay in delivery data	Sum	Finish	Lost			

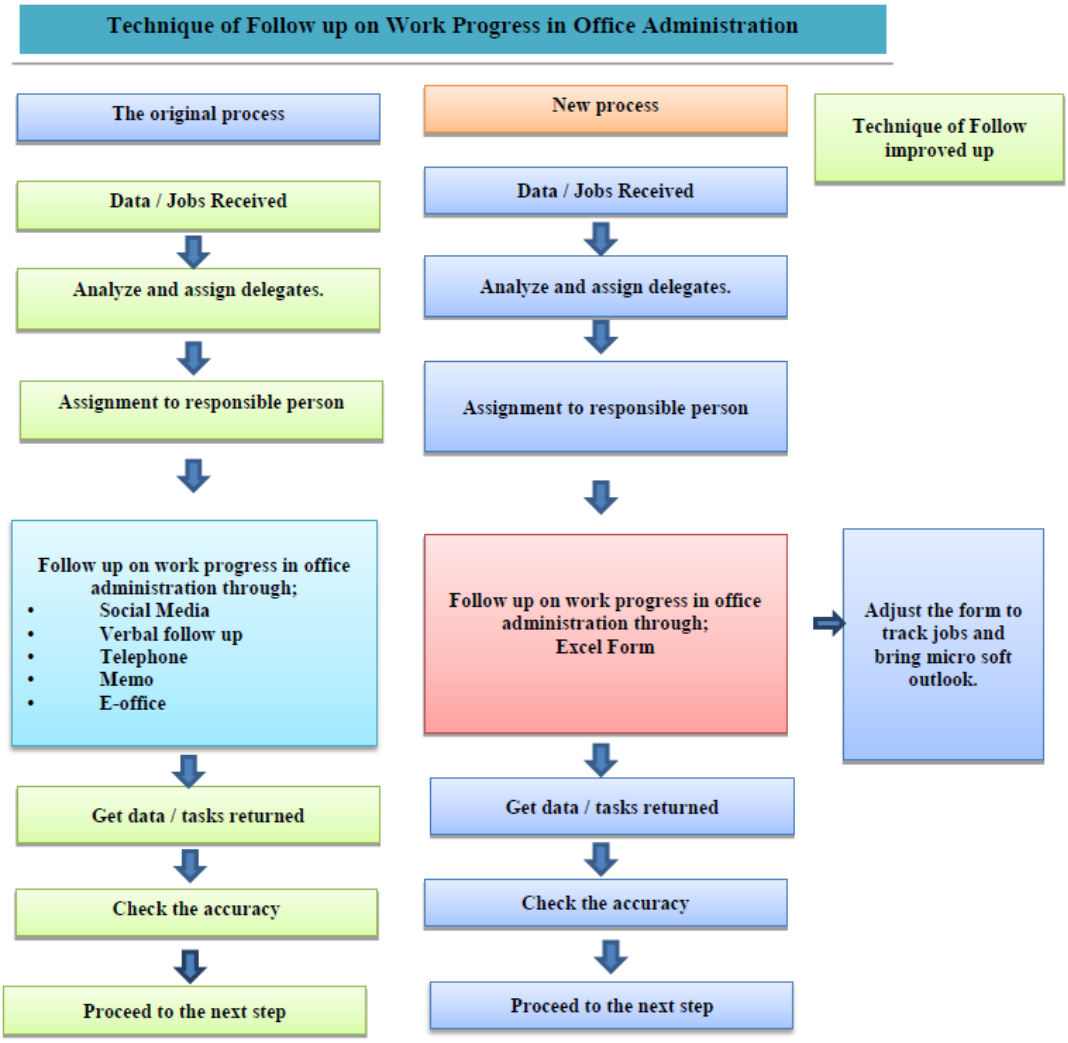
After that the group members conducted knowledge exchange to compare the results of using the original techniques; social media, verbal follow up, telephone, memo, as well as e-office and the new technique; excel form; to find out the efficiency of the new technique comparing to the original ones.

The results of using the new technique of follow up on work progress in office administration through the Excel Form lead to the reduction of operation, the convenience in checking the completeness of work done, and the fast way to check the duration of work done. The Excel Form enables the reduction of duration in follow up on work progress, the error on work, the delay in work submission. The use of the Excel Form instead of using original techniques in follow up on work progress in office administration results in 95 percent of the reduction of follow up time, 100 percent of the reduction of errors, 2.5 percent of the delay in work submission, and 100 percent of the successful times.



After that the users' satisfaction of the use of the Excel Form in follow up on work progress is analyzed in comparison with the original techniques. The analysis results reveal that overall level of users' satisfaction of the original techniques of follow up in moderate level with mean at 2.46, and S.D. at 0.53, while that of the improved technique; Excel Form is in high level with mean at 4.51, and S.D. at 0.58. In terms of item analysis, the item with highest mean scores includes the convenience of the use of Excel Form. Moreover, the improvement of the process of follow up on work progress by using the Excel Form is conducted by using Microsoft Outlook. This knowledge is collected and recorded systematically before the

implementation of the Excel Form by Chiefs of Office in all faculties in the form of social media with handbook detailing the technique of follow up on work progress by using Excel Form.



CONCLUSION

Due to the problems of follow up on work progress in office administration by using original techniques, namely using social media, verbal follow up, telephone, memo, and e-office, there have been an attempt to improve the process of follow up on work progress in office administration. Chiefs of Office in all Faculties of the University form Chief of Office Group, and employ Knowledge Management steps among the group members. The Knowledge Management steps include knowledge exchanging, meeting, knowledge extraction and refinement to find new technique of follow up on work progress in office administration. The results of the Knowledge Management show that the use of Excel Form in follow up on work progress in office administration is efficient in solving the problems. After that the Excel Form has be used in all Offices of the Faculties for one month, then the results of using the improved process or the Excel Form are analyzed in comparison with the original techniques. The analysis results indicate the reduction of the delay in work submission, the error and time consumption in follow up. Moreover, the users' satisfaction of the use of Excel Form is high level while that of the original techniques is in moderate level. It can be concluded that Knowledge Management can be employed among group members to improve process and solve the problems because of the coworkers' cooperation and attempt to solve their own problems. Moreover, the Excel Form can be used as an efficient technique of follow up on work progress in office administration because the form is easy and convenient to use.

ACKNOWLEDGEMENTS

The author would like to thank Faculty of Humanities and Social Science, College of Innovation and Management, Suan Sunandha Rajabhat University (www.ssru.ac.th), Bangkok, Thailand for financial support.

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KNOWLEDGE ON FOLLOWING-UP AND RECORDING ACCORDING TO PERSONNEL DEVELOPMENT TRAINNING

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ABSTRACT

The knowledge on following-up and recording according to personnel development training at Suan Sunandha Rajabhat University was based on KM action activity of supporting staffs, aiming to improve the operation process and extract the knowledge to technical improvement. The application could improve the routine operation in terms of process, time, and could create efficient and effective innovation. The task concerning following-up and recording according to personnel development training was selected to serve the first university's strategy "Develop the university to become sustainable niche guru." This also responded to the university's goal in terms of management with good governance.

Keywords-- Personnel development, Process reduction

PRINCIPLES AND RATIONAL

Personnel development was a solution for personnel management, including the work techniques which were changeable at all time. One who had fitted to a job and could perform well at a certain time might not be good when time passed. To make personnel active and efficient without any interruption, personnel development had to be conducted for the positive changes in terms of working style, knowledge / ability / skills and attitude. Three dimensions were at least focused: knowledge, skills and attitude. The achievement of organization development depended on those changes mentioned.

Due to those awarenesses, personnel section valued the after-training report, which was an evidence for identifying the performance of the university's operation overall. The operation process was created to facilitate all bodies and could make all relevant reports done in time.

RESEARCH METHODOLOGY

1. The team cooperatively examined all knowledge available, in particular, the knowledge on following-up and recording according to personnel development training. The knowledge sharing, exchanging, lesson-learned discussing, techniques and operations were conducted occasionally upon appointment.

Table1

Knowledge examination of active member

Lesson-learned owing to individual operation
1. Upload forms on website and members download them 2. Set a meeting and clarify steps for individual development 3. Follow up training report via social media - line, Facebook, e-mail 4. Notify steps for training request at the beginning of fiscal budget year. 5. Notify for report submission 6. Record training in the ERP system 7. Report to board monthly for following-up
Technique / method on following-up and recording according to training
1. Follow up training report via social media – line, Facebook, e-mail 2. Report to board monthly for following-up

2. Group members exchanged and shared their ideas, drafted technique / method on following-up and recording according to training. Then those were extracted and classified according to priority. Integration on repeated process and frequency were also considered.

Table 2
Knowledge extraction

Method	Frequency (amount) high ⇨ low or more value ⇨less value
1. Set a meeting and clarify steps for individual development	1
2. Notify steps for training request at the beginning of fiscal budget year and report submission	2
3. Follow up training report via social media – line, Facebook, e-mail	3
4. Record training in the ERP system	4
5. Report to board monthly for following-up	5

3. Group members shared and discussed what founded from the extraction; and then revised them to be appropriate to technical implementation.

Table 3
Knowledge extraction for technique improvement and implementation

Operation required improvement	Techniques applied
Operation 1 Set a meeting and clarify steps for individual development (**Duration**: The beginning of fiscal budget year)	Meeting should be set before the fiscal budget year validity: - Make an agreement among bodies concerned in terms of operation process - Make a notification with report forms attached
Operation 2 Notify steps for training request at the beginning of fiscal budget year and report submission (**Duration:** After the meeting in 1)	Make a notification individually with report forms attached
Operation 3 Follow up training report via social media – line, Facebook, e-mail **(Duration:** On 30 of each month)	Create line group for convenience
Operation 4 Record training in the ERP system (Duration: On 1 of each month)	Record individually in ERP system
Operation 5 **Report to board monthly for following-up**	Summarize and report to board monthly for following up

(Duration: Monthly**)**	

RESULTS

Group members employed the techniques for improvement on following-up and recording according to personnel development training as illustrated in the following chart.

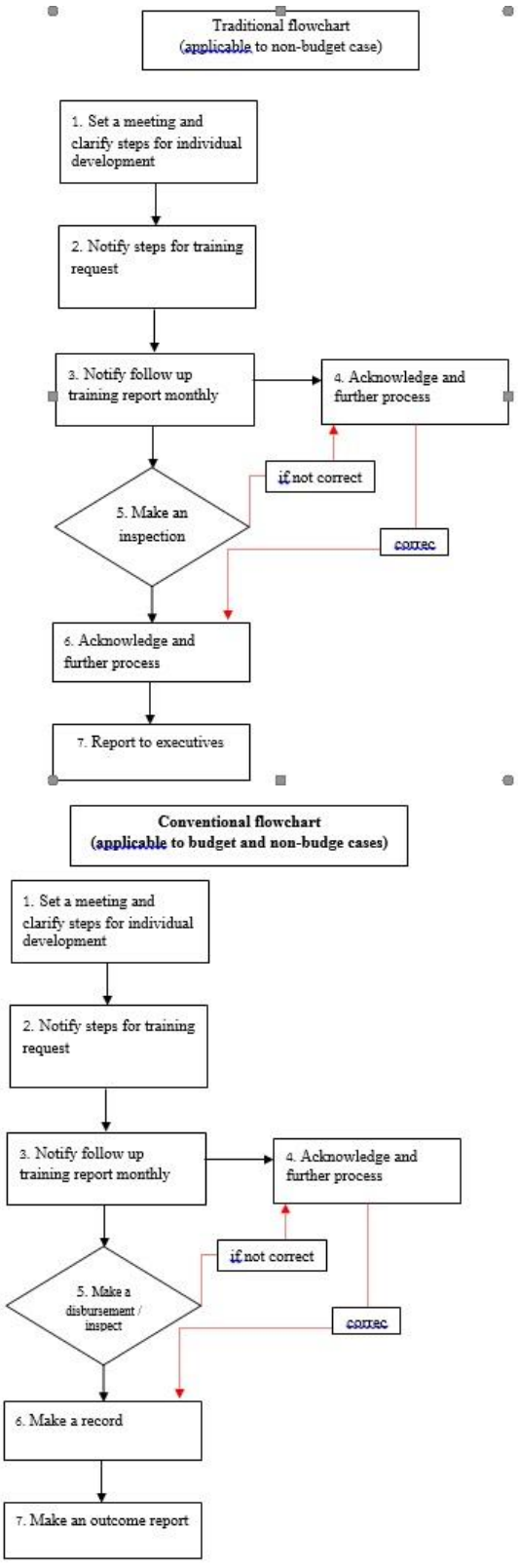

Figure 1. Comparison Flowchart between traditional and conventional operations

DISCUSSION

The application of process / operation development could reduce the time used, reduce the steps and reduce the conflict between the operative staff and personnel.

RECOMMENDATION

The recommendations were as follows:

1. In terms of knowledge enhancement, the publication to all staffs should be done and follow the steps identified in the flowchart in order to improve the efficiency of personnel; and also could be applied to personnel responsibility interchangeably.
2. In terms of innovation, the improvement on following-up and recording according to personnel development training was classified as a management innovation, in which all bodies concerned could apply efficiently, and can reduce time and process as well.

ACKNOWLEADGEMENT

This research was conducted under the policy of Suan Sunandra Rajabhat University in promoting and enhancing the faculty member's potential in term of research.

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PROBLEM-BASED LEARNING WITH MATHEMATICS TEACHING : PRINCIPLES AND GUIDELINES

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ABSTRACT

This article is written after the author has studied problem-based teaching. This study aims to study the problem-based learning and teaching of mathematics and to study the use of mathematical skills (solving problems, reasoning, communication, media, presentation and creativity) using this activity in the field of skills development and mathematical processes. The results of problem-based teaching were found to be enthusiastic and they can use mathematical skills well and also create many desirable features such as group work processes, acceptance of others' opinions.

INTRODUCTION

The teaching and learning management has been converted to the age. In the past, students will learn arithmetic such as positive or long division. The students must memorize those methods. But current mathematics teaching technology has come into play. Students can find information on new knowledge from the Internet, such as fractals or Fibonacci Numbers. The Partnership for Learning 21st century Skills), or the network named P21, has developed a vision for student success in the new global economy.

This includes essential skills in the 21st century.

1. Learning and innovation skills.
2. Information Technology Skills Media and technology
3. Life and career skills

Based on this concept, the teaching of mathematics must change. The 21st century mathematics education has become the mathematics for all (Mathematics Literacy), where mathematical knowledge is knowledge. Mathematics in the classroom is used in situations where students must be able to identify critical situations encourages investigation, investigation, and resolution. Students must have many skills such as thinking skills and reasoning, communication skills, modeling skills, problem solving and solving the problem of presenting symbols using the current implementation of knowledge in mathematics content is not enough to solve the problem. The key to knowing math is that mathematical process or mathematical thinking the process that students use in their efforts to solve problems is considered. Mathematical performance competencies reflect the way in which students use mathematical processes to solve problems. There are three essential competencies that students must have:

1. Reproduction

2. Connection

3. Reflection and Communication

The National Council of Teachers of Mathematics (NCTM 1998) has defined the needs that students must have in mathematical knowledge:

1. Students must be math problem solvers.

2. Students must be able to communicate with knowledge.

3. Students must have a mathematical reasoning.

4. Students must learn to appreciate mathematical values.

5. Students must be confident in their mathematical abilities.

Based on such importance, the role or management of teaching and learning will change from teaching or explaining, which turns out to be an activity based on the problems students face.

For teaching problem-based learning expresses the use of knowledge, combined with the skills and processes that students have through math problem solving process, problem-based instructional management. Students have the opportunity to create self-learning and collaborate with others and use technology to find or research more. There are working processes, groups, discussions, analyzes, syntheses, and conclusions to gain knowledge. The problem-based learning management has five steps:

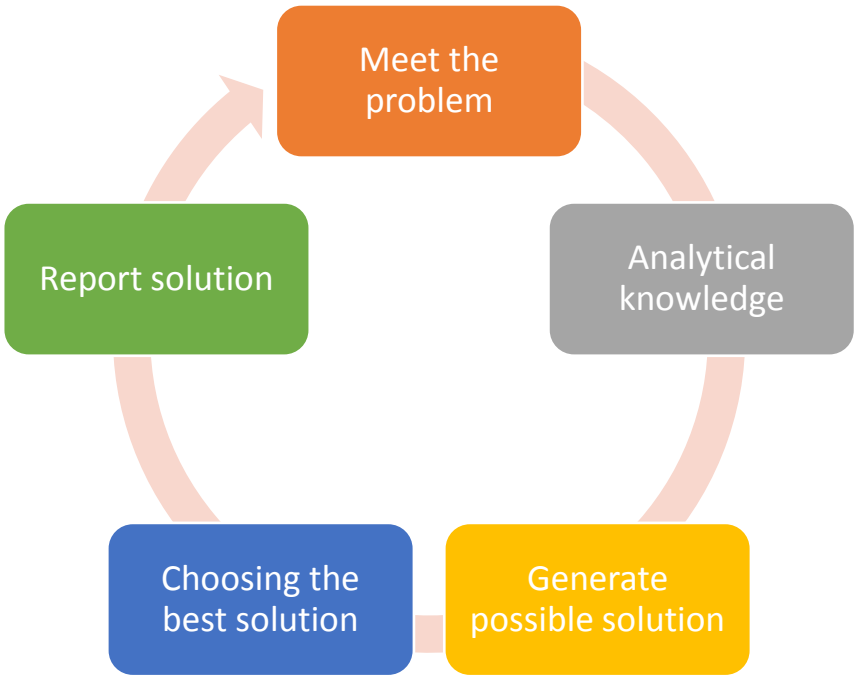


Figure 1: The problem-based learning process

1. Meet the problem, Teachers give examples of real problems or situations to students thinking or find a solution. Students may be divided into groups for discussion. Or exchange

2. Analytical knowledge, at this stage, students must analyze the problem of what knowledge to use and students have that knowledge? If not, how can be the knowledge created? This step is important because students will learn more.

3.Generate possible solution, this step, a student will use the knowledge contained in the 2nd to solve the problem, which will be very valuable if students can solve many problems.

4. Choosing the best solution, at this stage, students must learn the strategies to solve the problem that best suits the student.

5. Report solution, at this stage, a student will need to solve the problem solving process that students think is best or most appropriate for the student. At this stage, students will practice presentation skills and communication, which is a necessary and important skill in learning mathematics.

OBJECTIVES

1. To study the process of teaching mathematics using problem-based learning.

2. To study the use of mathematical skills (problem solving, reasoning, communication, media, presentation, and creativity).

METHODOLOGY

The instructor takes the situation or problem with the student by taking 5 steps as follows:

1. Meet the problem

Example problem

Lift has a number of the candy, Give to Petch to 1/3 of the total, and give to June ¼ of the rest. If Lift transcend 24 candy. How many Lift have candy.

2. Analytical knowledge

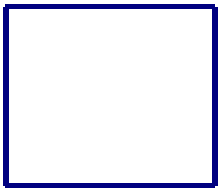
Students will analyze the knowledge used to solve the problem, fractions or equations and students have knowledge of that.

3. Generate possible solution

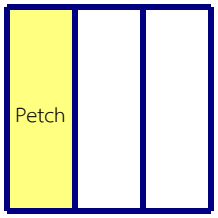
Students solve problems.

Solution 1 Draw a picture

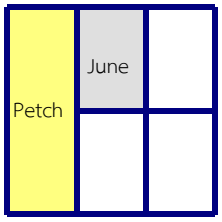
Step 1



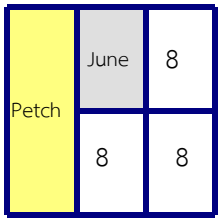
Step 2



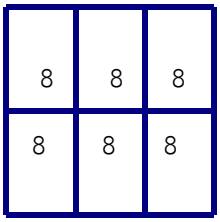
Step 3



Step 4



Step 5



So Lift have 48 candys

Solution 2 Write a equation

Step 1 x

Step 2 $x-\frac{1}{3}x=\frac{2}{3}x$

Step 3 $\frac{2}{3}x-\frac{1}{6}x=\frac{1}{2}x$

Step 4 $\frac{1}{2}x=24$ that $x=48$

So Lift have 48 candys

4. Choosing the best solution.

This step, members within the group must help each other choose a solution by looking at the suit class, such as concept 1, suitable for elementary students. Concept 2 may be suitable for students who have already learned the equation.

5. Report solution

After selecting the method or procedure to solve the problem, students come out presenting a way for members in the room to exchange learning and bring the knowledge to develop.

ACKNOWLEDGMENT

The author would like to thank the Suan Sunandha Rajabhat University, Bangkok, Thailand for financial support. The researcher likes to thank Asst. Prof. Dr. Witthaya Mekhum for proofing the research paper.

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MERITS AND DEMERITS OF DECENTRALISATION IN HIGHER EDUCATION: A CASE STUDY OF ONE HIGHER EDUCATION INSTITUTION IN SOUTH AFRICA

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ABSTRACT

The aim of this paper is to present merits and demerits of decentralisation from the perspectives of the employees from one higher education institution in South Africa.

During the apartheid era in South Africa, there were 36 higher education institutions controlled by eight different government departments. One of the South African government's initiatives in post-apartheid era was to transform the system of education. This led to the reduction of universities from 36 universities and polytechnics to 23 higher education institutions, including 11 research universities, six universities of technology and six 'comprehensive' universities (which combine formative and vocational higher education). The merged universities had centralised systems of governance and these did not seem to work due to a number of reasons including the distances between campuses.

Nine years after the merger, one comprehensive university underwent further transformation and opted for decentralisation of its government systems. This could not be implemented as expected hence the paper sought to explore the merits and demerits of decentralisation. This is a case study of one higher education institution in South Africa. It is descriptive and used both questionnaires and interviews to collect data. Findings reveal that merits outnumber demerits of decentralisation. Despite this, the process was not implemented smoothly in the institution. This could be attributed to failure to negotiate the process in advance and getting a buy-in from everyone before decentralisation is implemented. The merits of decentralisation are presented in this paper. The paper concludes by making recommendations on lessons to be learnt in ensuring the smooth implementation of decentralisation in higher education.

CHANGES OF NATIONALISM AND WORLD ORDER IN LANGUAGE POLICY: MANDATORY SWEDISH LANGUAGE STUDY IN FINLAND

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ABSTRACT

Finland is a bilingual country, where both Finnish and Swedish are official languages. Even though the legal status of the two languages is equal, there is a great disparity in the usage of the languages. Swedish-speakers make up only five percent of the population. Despite this disparity, it is mandatory for all pupils to study Swedish in primary and high schools. This language policy has been a cause for controversy in Finland for over a century.

When examining language policy in Europe one cannot bypass the impact of nationalism and world order and its evolution. The end of the First World War and the rise of small monolingual nation states was a prelude to the establishment of increasingly language-based nationalism. After the Second World War the language-nationalism decreased both in Finland and in Europe. During the Cold War while under the pressure of the Soviet Union, it was useful for Finland to highlight its status as a bilingual nation in order to position itself in the camp of the Nordic countries and the west in general. Swedish language was held up as a proof that Finland belonged to Western Europe and was a part of its culture.

The fall of the Berlin Wall and the sudden collapse of Soviet Union made the questions of ethnicity and language-nationalism relevant again in newly "independent" states. These great geopolitical changes reflected on Finland and its language policy as well. In the late 1980's the demands to weaken the role Swedish language education in Finnish schools rose again.

The development of nationalism is closely linked in Finland to the mandatory Swedish language studies. On the other hand, the direction of Finland's language policy has always depended on the state of world politics and Finland position in the world order. Today globalization and the "new" cold war pose the biggest challenges for Finland's, and European language policy.

