

Integration of Lean method in English Language Teaching and Learning: A New Perspective

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Abstract

Lean method is defined as a method that follows a given sequences of logical steps to make the best of a given value while at the same time putting into consideration the necessity of minimizing waste. It also ensures the flow of the development or usefulness during the retrieval of a learner's prompt. The concepts of value, flow and retrieval play an important role in the long-term objective of the lean approach which in most cases is perfection. This can be defined as a continuous need for development in the framework of any organization. The application of lean methodology in the tutoring process gives the tutors an ability of doing away with evidences which tend to be beneficial to the students and instead, they are encouraged to put more emphasis on furthering the teaching and comprehension process. The application of lean ideologies and procedures made possible through industrialization will give the teachers an upper hand such that they are able to improve their content, knowledge, planning and valuation techniques that are incorporated in their accounting classes to assist them in verifying the acquisition of skills by students

that will turn them into productive people in the near future. Various techniques can be used to teach learners. These include but are not limited to readings, class discussions, game and simulation based practices, and the open forum procedure. The readings and discussion procedure gives the students opportunities as well as roles of airing out their ideas concerning various matters, thus involving the necessity of critical thinking to assess the logic behind other people's consideration by having a free and interactive session. The application of lean production is first dependent on the identification of the technique before shifting the emphasis on things that add more appeal, inspiration of students to take part in frequent continuous improvement, doing away with non-beneficial practices through Kaizen, conducting PDCA, and forming a group that will strive to ensure the survival as well as effective resource sharing among each other. The application of lean thinking and the designing of a lean culture classroom is first dependent on the planning of the classroom. This is then proceeded by the management of visual sheets, followed by before-hand planning, the setting up of the takt-time and finally the creation of a standardized procedure which is achieved by designing syllabi and schedules and other materials which are associated with the entire process. The availability of other classroom resources such as Pareto charts, root cause and weekly quality assessment is also mandatory. The fulfillment of the objective has been made possible by the approval of a research question too be used for data collection throughout the study. An English preparatory school student was issued with a 35-item questionnaire while interviews were conducted to another 12 students.

Also, the detailed figures revealed that the male learners extensively used language learning techniques more frequently with a (mean of 3.3) compared to the female learners whose (mean was 3.2) it is also possible to realize that male learners employ lean learning more compared to their female counterparts. The (F) value is 2.479 a figure that indicates the level of dependency and their respective significant levels. (>0.01 at the level of 1%). From this model, the duration of English ($b=1.534$, $p=.116$ $p>0.1$) is an unreliable figure to be used in

predicting the learning lean method. T and P which are $(27.87 > .01)$ and the Value of $P(.000)$ respectively show the detailed factor of gender effect on the lean model of learning in a significant manner. That aside, all the values in the model strongly back up the perception that gender is critical and essential in the application of the lean technique of learning.

Keywords: Lean, English Language Teaching, Lean Strategies, Lean Methods, Academic Achievement.

Introduction

This study is mainly inclined towards explaining the lean approach and to reveal the scope in which it can be used simultaneously in tutoring the English language among students. The teaching of English language has been brought forth in a new approach to enable learners as well as those from an-English speaking regions to quickly master the language. The entire strategy incorporated in this exercise is known as the lean production.

The concept of lean is famously attributed to the Japanese industry and more specifically, Toyota Production System(TPS). The idea was conceived in the 1950 century by Eigi, a young engineer from the Toyoda family. He came up with the idea following his visit to another leading motor vehicle manufacturing company, Ford Factory (Monden, 1983; Ohon, 1988; Shingo, 1988). The lean approach proved to be a useful conversion tool especially considering the fact that Japan had limited resources and the local rivalry in the automobile industry in the country. The lean approach is built on the concept of Ford's mass production activities and with some few modifications in data-driven analysis and systematic method, it was incorporated into the Japanese system. The Mass Production System which was pioneered by Henry Ford in 1908 has proven to be the most revolutionary concept in the automobile industry since it has helped many in making better their processing activities.

Lean manufacturing rapidly gained popularity in the following decades in most Western countries automobile industries as well as other service complements affiliated to the industries as well. Currently, the approach has been put into

practice in a wide array of industrial frameworks and the entire concept has shifted from being based on the shop floor focus aimed at reducing waste and lowering the cost of operations to a perception that is mainly aimed at improving the value of the commodities being merchandised to clients by adding more superior features (Hines et al., 2004: 995). Lean basically tends to provide the learners with more information while at the same time using very little resources. This fact can be seen from the gradual rise of Toyota Vehicle Company, from a little known car manufacturer to a globally famed company at the moment. Most submits of lean tend to argue that lean manufacturing has contributed largely to the development of competence. This can be seen from Toyota's separation of effects and the incorporation of collective reasoning of the precursors to its little production line activities. The production is further developed through improving the waste discharge activities by adding on the newly discovered ideas (Ziskovsky, 2007). In a similar way, lean is perceived by many to be a collection of tools that are mainly aimed at reducing waste. The implementation of the lean strategy is governed by five core principles. Furthermore, the strategy has an additional 25 tools: 5S "diminish sat around idly and movement at the smaller scale level", automation (facilitates the operations of activities in a production line without necessarily involving human intervention); cell fabricating (restructures the entire processing activities and puts more emphasis on a single item or an isolated family: improves the standard, stock and many other significant factors that have to be considered), ceaseless stream (organizes the layers by ensuring coordinated, continuous stream), constant change (to ensure that the daily enhancements are put into consideration and are closely monitored for instance by pulling together financial resources); Design for Six Sigma (DFSS) (to assure people that a product's framework is more likely to be made with anomalies which can nevertheless be fixed to ensure their success and thus address the desires of the clients), disposal of waste (improves the competence and the practical nature of the organization), centered manufacturing plants (improves the commodity handling capabilities by marketing procedures and logic); in-station quality control (restricts the submission such that they do not go below the stream procedures. It

also ensures requests for modifying quality issues); jidoka (helps in avoiding emergencies in one section of a production line from accumulating and also focuses on essentialities to make mutual treaties more agreeable). Six Sigma (Six Sigma improves the standard, implementation procedures, activities and the general outline of the organization.), Kaizen Blitz (this feature improves the sections that have closed environments quickly and reduced dullness in an organization by increasing numerical interactions. enhances confined creation regions rapidly and significantly beats inactivity basic to numerous associations); Kanban's main role is to ensure that it organize the entire generation activity as well as minimizing the work-in-process while simultaneously encouraging transition in various regions. The bookkeeping activity in lean is mainly inclined towards accurately showing lean exercises and boost the lean activity. Lean office on the other hand is used to ensure that the standards of operation are frequently updated in a given office situation. Lean providers on their part contribute in the furthering of the modification agendas upstream through the various inventory connections. Fabricating methodology refers to the assurance of a match or congruence between the firm's front office operations and the capabilities of the production line outline. Blended model creation refers to a prompt that requires one to design forms upstream based on a preexisting index construction system. One piece stream is meant to ensure that the stock is reduced to a work cell and thus drives the improvers as well as work adjusts. The main purpose of utilization stockpiling is to reduce the progress of material. Preparation mapping is used to simulate as well as assist in the understanding of progress of events at both large and small scales. Creation levelling on the other hand serves the purpose of ensuring that the variations on the various procedures used in the processes are maintained at a steady rate. Pull and synchronous strategizing is meant to network and harmonize forms and reduce the chances of any excesses of WIP stock or other defects that may arise. The function of Brisk and simple Kaizen is to formulate, distribute and maintain continuous modification practices. Finally, setup reduction is meant to control the duration of setup as well as checking the

financial spending thus doing away with limits and subsequently encouraging the creation of little lots.

Lean puts together Kaizen, which is Japanese for change, or constant improvement. This is a format where ambassadors from various hierarchies in an organization participate together to accomplish rising improvements at the assembly line. It can also be defined as an aggregate of talents within a company in order to come up with a superior piece of a motor that would be further processed for better quality. Thus, the activity is half activity plan and half rationality. Kaizen is a daily activity whose main objectives outlast time. It is a similar procedure whose accuracy has numerous benefits. Some of the benefits include adopting the surroundings upon which activities are conducted, pointing out to individuals how to execute quick evaluations by using the intellectual methods to identify as well as enabling members of an organization on determining and disposing waste within their premises. As an activity planning tool, Kaizen is used in arranging events focused more on improving specific sectors of the organization. Such events include the various categories of employees' at all hierarchical levels in the organization, as well as plant floor ambassadors. In terms of logic, Kaizen is meant to instill a culture of effective occupation among the workers that will enable them to bring about effective changes in the organization. Organizations that are deeply rooted in the lean approach eventually have transformed mindsets for both the top management as well as the plant floor ambassadors.

To add on, lean uses Poka-Yoke, which can be translated to mistake sealing. These can be further explained as innovative devices which greatly reduce the chances of an administrator to commit mistakes (Liker, 2004). Poka-Yoke has five principal means of identifying problems and averting them. The devices were developed by Shigeo Shingo of Toyota Motors, as a means of ensuring nil mistakes in production. The methodology of Zero Defects, commonly abbreviated as ZD, is additionally referred to as problem sealing or safeguard. Poka-Yoke takes over the role of controlling activities that require great dexterity therefore

making the employees free to seek other activities that would restore or strengthen their confidence levels. A perfect example of the importance of the Poka-Yoke can be seen through a case where the gadgets were unavailable and light blinds were used over the plate of cotter pins. If the light blind was not dismantled and an administrator was approaching it to fetch a cotter stick, the dynamic mechanical production line would halt and a flashing light would be produced. This would lead to the sounding of an alarm and therefore inform the administrator of looming danger. Lean production has been found to be guided by five ideologies and seven wastes, which can be minimized through the incorporation of various tools in the system. Lean production is guided by the core principles of providing much for its clients based on the limited resources that are available. This therefore implies that the customer's priorities are given more consideration and subsequently waste production is reduced. Additionally, Lean is made up of competent personnel who are constantly researching for better approaches of meeting the demands of their clients in various spheres. Leanness can be defined as a state where one is continuously exposed to logical methodologies that are aimed at giving the individuals incentives that will encourage them develop appropriate methods of disposing off waste from the organizations. Simply put, lean is aimed at ensuring that the esteem of the clients and the workers is upheld in spite of the inadequacy of raw materials. Further development of the esteem with the little resources additionally makes it possible for lean processes to put in more emphasis on allowing customer requests to force commodities and the management through the production line and the stores connection. Bearing this in mind, it is important to consider the fact that lean esteem stream is incapable of catering for the demands brought forth through the outline without appropriately using the expansive cradle stock in the company (Glovvia International, Inc., 2008).

Lean is structurally a hierarchical program that enables every expert in the education system to design their own implementation and preferred execution realization through the methodology change. Lean additionally makes it possible to connect with everyone who is involved in the streamlining process by clearly forming a separation from the progress that shows signs of inefficiency, ambiguity, or

disorientation to the general objective of the workplace. Incorporating an esteem that also includes the perspective outline, learning institutions can improve their competence in the various operations conducted among them as well as increasing their influence in terms of how the administration conveys various information regarding the operations of the school. This will subsequently lead to the development of a successful culture of achievement and realization in the institution. (Ziskovisky, 2011).

It is also important to appreciate the age of Lean in terms of the approach dealing with higher education. Various institutions of higher learning as well as high schools begun implementing the lean approach 5-8years back. Some of the most crucial cases recorded in writing originate from the United States, a region with many HEI's which are mainly based on precise market requirements and are more receptive to private division of the management practice (Owlia & Aspinwall 1997). Most of the records can be categorized under dark writings such as the online papers with verifications that tend to be more of episodes (Moore et al. n.d.; Alp n.d.; Kusler n.d., see also Jin & Kachroo 2010). Such records, which usually do not meet the scholarly threshold of experimental studies, usually praise the achievements of the lean approach through their designers and authors. However, they also tend to show signs of doubt in terms of the results obtained from quantitative research of the lean methods. Some insightful articles on the entire idea remain theoretical or conflict the HEI based on the lean title (Comm & Mathaisel 2005, 2005). This forms a clear indication of ex-post legitimization. Several universities have proficient approaches which also double as expenditure reduction approaches. Nevertheless, it is important to consider that lean traces its roots back in the industrial setting rather than the academic world. This however does not limit the application of lean procedures in institutions of higher learning since it has been proven that the process is highly effective in the academic world as well. The role played by lean in such institutions had been predetermined and found to be quite useful. Various reports compiled to identify the efficiency of the lean approach in education institutions have turned out to have positive results regarding the same. The popularity of the lean method in institutions of higher learning can be attributed to the fact that it tends to reduce wastage of resources, has encouraged the streamlining of crucial activities and also has actively involved the entire taskforce of such institutions following the global financial crisis of 2008 (Balzer, 2010; Finn & Geraci, 2012; Radnor & Bucci, 2011). Institutions of higher learning are constantly in search of more effective strategies to be used in their service delivery in both academic programs and other sectors of the institutions as well (Dickeson, 2011). It is important to consider that most institutions of higher learning do not operate on fixed schedules in terms of their enrollment, their

scope of the mission and the costs of operation. The uncertainties may be attributed to the increasing inflations in the society thus leading to unpredicted patterns (Association of Universities and Colleges in Canada, 2012). Houston, additionally explained that institutions of higher learning have shifted their focus to the enhancement of their products even more rather than accountability. This is in line with the principal operations of the lean methodology which majorly focuses on enhancement as its major application strategy.

Lean teaching is defined as a natural manual for tutors in various levels of learning who are mainly determined to be better instructors in the future. The concept of lean learning is critically dependent on the individuals since the engagement between the learners and their tutors facilitates effective learning as well as the continuous change that makes the entire learning process dynamic and productive. A more immersive education system encourages critical thinking and independence among young learners and this prompts the major shareholders in the education sector to invest even more in the education system. It is common to find that most business firms end up recording loses owing to the fact that they had set wrong priorities and therefore they ended up realizing the correct products and services for their markets after they had already collapsed. Thus, tutors tend to familiarize themselves through research with the various probabilities of the lean startup, in an attempt of demonstrating the efficiency of the youth in various leading organizations (Eisenmann, 2011).

The lean theory continuously sorts out the various forms in an organization while at the same time eradicating any waste. It relies on direct principles and devices that are applicable in any given scenario that requires the exercise of authority. In regards to the employees of a given firm, it is possible for an organization to put into practice leans principles without necessarily experiencing any financial constraints. Such organizations usually end up receiving more returns since the profitability tends to be inversely related to deformities, reduced stocks and directly proportional to increased delivery durations and money flow (Tatikonda, 2007).

Some difficulties have been experienced in the lean approach especially when attempting to introduce the idea to those who have not been exposed to it before. To solve such difficulties, the instructors should have the objective of ensuring that those being taught can have a visualization of the significance of lean logic and why it is important in their daily activities. The main reason behind the evaluation is to come up with an involvement of various features such as pull generation, process timing, pre-work, teamwork and correspondence (Dukovska-Popovska, 2014).

Lean process has been associated with effective perceptions in improving learning. This is in spite of the fact that the lean process is a recent concept in the market. The overall significance of the above facts is that it makes it possible to predict some of the possible results based on other lean interactions which are mostly reduction of expenditure (Zikovisky, 2007). Various methods can be used to explain some of the concepts of lean. Such methods include reading and coursework, amusement and recreation-based methods and the open discussion plan. Reading and coursework provides those learning with an opportunity of expressing their opinions regarding various matters as well as employing critical thinking skills to evaluate the validity of statements suggested by others on the same matters. One advantage of this approach is that it promotes the art of survey among the students and also widens their scope of perception on various matters that may be presented before them. The approach also encourages modifications among the learners since each of them may come up with different solutions to the common problem at hand (Bonwell and Eison, 1991).

The open classroom gathering method is a participative method that ensures that the students share their ideas and thus gain knowledge from each other concerning various readings and contexts. The key purpose behind the application of the classroom gathering is to further demonstrate the lean method (Hamzeh, 2013). The approach is mostly associated with the Construction Management Department of the Colorado State University. This is because speakers would be brought to the department to motivate the learners and give

them tips concerning the dynamics of the employment world and how the lean strategy can be transferred to this section of their lives. (Hamzeh, 2013). The online discourses, which are considered to be an advanced form of the open class gathering technique, has proven to be more popular among students. Tsao et al provides questions regarding the transfer that blends several discussions to a summary that prompts the students to research even further to obtain better clarification on the point at hand. Two crucial points are mostly considered in this section; the first being the positive gain from the learning activities of the students which acts as a motivation to the tutors, an opportunity for the students to improve their knowledge and increasing the standards of education. The second part is in enhancing the work environment for the tutors to design a better workplace that would attract more tutors and in the learning institutions. This would replace the conventional classrooms used by the teachers in their daily activities. (T. Netland, 2005). Lean practice can be employed by school management to help in the tracking of delivery of technology. Value stream mapping can be used as a benchmark for questioning the opinions of the primary stakeholders in the education sector regarding the standard of the education system in the respective institutions (Keyte & Locher, 2004). Time allocation and some of the resources spent by an individual in various activities within the premises of a given school can be used to clearly explain a student's typical day in a given institution. Although it varies according to the perception of the shareholders, choices can be made based on the worthiness or unworthiness of activities spent in the academic day. Valuable materials and practices are maintained while those that do not meet the required standards tend to be discarded (Flumerfelt, S., & Green, G., 2013).

Methods

Participants

A total of 622 participants from Sabis international school from the academic year of 2017-2017 were used in the study. 282 females and 340 males were selected between the ages of 5 to 15 years. Their English background was taken into considerations and subsequently, they were classified into three groups of 0-5 years, 5-10 years and 10-15 years based on their years of learning English...

Measures

The quantitative descriptive analysis was widely used to determine the relationship between lean learning methods, periods of English language learner and regression examinations among the two genders. Following the deliberation of the study subject, the plan of the design is explained and an evaluation is put to practice to test the dependence of the tools.

A questionnaire consisting of 35 items was then issued to each of the 622 participants from Sabis International School in Duhok City. Moreover, to establish the various levels of agreement or disagreement over various topics in the questionnaire, a 5 choice Likert type of questionnaire was used. The 5 choices ranged between never to always to indicate how the respondent agreed or disagreed with the question being asked. The Pearson-Correlation approach was then applied to determine the association between the relationships.

Findings

The questionnaires issued out were then collected and using the Statistical Package for Social Sciences, data analyses was conducted. In order to properly size the dependency of the questionnaire, the Split half technique was applied. The reliability coefficient for this particular split half was found to be 0.80, which was in line with the typical Likert model approach. Some of the modules which were used to analyze the data include the frequency, percentage, correlation, linear regression and ANOVA. From the analysis, male participants had a frequency of (340) and a percentage of (54.7) while their female counterparts had a frequency of (282) and a percentage of (45.3). Aside from that, the frequency and percentage of those between (1-5) years was found to be (182) and (29.2) respectively. Those between (5-10) years has a mean of (219) and a percentage of (35.2). Finally, those between (10-15) years had a mean of (221) and a percentage of (35.5). From the data, it is evident that students of Sabis International School in Duhok city can comfortably use lean learning. The summation of the figures above further show how the net students are within the acceptable range of high frequency of (3.5-5.0) and moderate use (2.5-3.4). Thus, from the data processed, no low frequency existed from any strategy that was employed i.e. (1.0-2.4). Instead, an average frequency of (3.2) was recorded for all the strategies used in the entire study. The male learners were also found to be constantly using the lean learning approach more than their female counterparts. The corresponding averages for the males was (3.3) while that for females was (3.2). For more clarification, the correlation between lean learning and the number of years an individual pursued an English course was also explained out to provide solutions for the Pearson product moment

correlation co-efficient, ANOVA, and linear regression were evaluated using the various figures obtained in the study. The Value of (F) obtained in the analysis was found to be (2.479), a representation of the significance of the data used which were greater than (>0.01 at the 1% level). Using this prototype and using the English learning period ($b=1.534$, $p=0.116$ $p>.01$), the figures used were found to be inconsequential to the study statistically. Value of T, which was found to be ($27.87>.01$) and the Value of P(.000) showed how the detailed aspect of gender played an important role in the lean learning method.

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Table 1: Correlations between lean learning strategies and the duration of taking English course.

Correlations			
		Gender	Duration of taking English
Gender	Pearson correlation	1	-.063-
	Sig. (2-tailed)		.116
	N	622	622
Duration of Taking English	Pearson correlation	-.063-	1
	Sig. (2-tailed)	.116	
	N	622	622

The figures above showed that a considerable negative relationship existed between reported frequency of the application of lean learning, gender and the English learning period. This relation could be seen through ($r = -0.063$, $p = 0.116$, $p > 0.01$, $n = 622$). Such figures were in agreement with the objectives of the study. The negative correlation between the English learning period and the application of the lean strategy exists due to the sig. (2-tailed) = 0.116 which was also found to be more than 0.01. Therefore, concrete evidence of supporting this kind of existence in the general population does not exist.

ANOVA					
Model		Sum of Squares	Df	Mean Square	F
1	Regression	.614	1	.614	2.479
	Residual	153.534	620	.248	
	Total	154.148	621		

a. Dependent Variable: gender

b. Predictors: (Constant), learning_English_language

Table 2: the regression analysis of the relationship between a gender and the use of lean learning strategies

To effectively note the significance of the regression, it was necessary to conduct an ANOVA. Based on this, the English learning duration where ($r = -.063$, $p=0.116$ and $p>0.01$), the value of (F) which was found to be (2.479) proved to be inconsequential to the study. The Value of T , which was found to be (27.87.02) and the value of p which was found to be (0.000) showed that the detailed gender factor on the comprehension of the lean method had considerable influence in the statistics. Also, the figures obtained from the regression prototype backed up the experimental data that was obtained. Additional factors which include the sex, period of learning English and the individual's age also played an

important role in the incorporation of lean learning among the students. the regression model comes out to support the view that gender is effective in the use of learning the lean method.

Conclusion

The lean method is a relatively new approach in the education sector. Nevertheless, the concept has been in existence for a long time in the production industry. Due to this, there exist striking distinctions between the products offered in the industrial model and those found in the academic world. However, there still exists some similarities between the two in terms of the execution of operations and provision of services to their clients. The similarities arise from the complex nature of the operations conducted in both spheres. It is evident that various procedures used by Toyota to improve their productivity can be equally used by learning institutions as well to improve their competence (Ziskovsky, 2007).

Lean can also be defined as a young method of production and a better approach to developing inventions as well as tracking the enhancement of new commodities in the market. Organizations that have embraced the lean approach tend to allow their workers and learners as well to come up with new commodities in a faster yet less costly way. The lean approach also ensures that the students are in a better position to develop their own manuals for studying since they have clearly defined goals. This gives the learners an opportunity to conduct their studies at their own reasonable speed and convenience since the learning materials are easily accessible. The lean process is built around ensuring that the students using it are able to compound on their existing knowledge and academic proficiency. Therefore, any unproductive ideologies in the lean approach tend to be disposed of.

Innovation refers to the channeling of thoughts in a particular manner to come up with a new mode of production of new commodities are carrying out a given activity. Lean has been known to offer learners with an opportunity of improving their innovative skills in various ways. Through Kaizen, for instance, students are able to come up with new techniques of producing various products as well as

modification of the preexisting resources. These capabilities have thus made Lean to be one of the most revolutionary inventions designed for an organization since it provides various institutions with the necessary vigor to conduct their operations as well as providing emerging companies with sufficient boost to start off their operations. The various prerequisites of Lean which include knowledge, ideologies, and inventions in the production line have further compounded on the popularity of lean.

This research has objectively discovered that no considerable statistical significance exists between the difference in the number of years that an individual has learned English and lean learning approaches. Nevertheless, a significant correlation has been established between the different genders and the application of lean methodologies.

The main goal of this research was to show the degree through which lean strategy can be used in the teaching of English language as well as identifying some of the consequence associated with the integration. The study has thus shown that the probability of desirable outcomes is at 50% thus showing how likely lean can be used successfully in the academic world. In spite of the fact that this research was limited to one physical location, the results can still be applied to other sectors as well.

This study has also helped greatly in highlighting how the lean approach can lead to success in the academic world, therefore, removing the existing misconception regarding the restriction of the method to the manufacturing sector only. The approach can be applied to students actively just as it is used in the various production tools in industries. The method, however, needs an innovative spirit and constant motivation to help learners realize their full potentials in various spheres.

The lean approach has a promising future due to its ability to enhance the creation of the road sector. Lean ideologies have for a long time been used to significantly execute the activities of companies which are aimed at maximizing their returns. Simulation games, on the other hand, have been found to be quite

crucial since they help demonstrate various principles effectively. The lean method can also be quite helpful especially to those students who are facing difficulties with the current education system. This is due to the simplicity and the clarity of the system. The lean method can also aid in ensuring the wellbeing of learners through addressing the personal needs of the students as well as determining the appropriate units and courses to be taught. The lean method has been found to reduce wastage as well as minimizing the expenditures thus ensuring that minimal resources are spent.

Recommendation

Individuals who tend to excel in their secondary languages tend to be more cautious when deciding on the strategies to use. Such strategies are usually carried over to other areas of their assignments as learners. Owing to a large number of participants who took part in this study, it is recommended that the research should be conducted to other global institutions as well and should incorporate many more participants. This will make it easier to make general deductions regarding the entire concept in global scales. Teachers and their learners should be equipped with the information concerning the knowledge of lean learning techniques since such techniques would be used when teaching other subjects as well. Additionally, the necessity of the strategies being put into practice can be easily deduced from such significance.

Studies released by various institutions of higher learning have shown varying levels of exclusivity owing to the dynamic nature of the various products released. Higher institutions are thus encouraged to embrace lean methodology since it provides them with an opportunity of having optimum results in the long run. Some of the benefits associated with the lean methodology in institutions of higher learning are the fortification of business operations as well as fostering healthy relationships with other global institutions as well (David E.2014).

Every management of an organization has to consider having a lean representative on their production floor. This subsequently implies the necessity of adequately training their staff on appropriate lean strategies and tools. A prototype should be established that would ensure that both the management and the employees work together to ensure that the objectives of the company are met.

This would have various benefits such as the creation of favorable ambiance for working as well as ensuring better operations in the organization. The organization on its part should ensure that the employees are well taken care of by constantly motivating them. This will instill the spirit of hard work among them (Lean Vet. 2017).

The results of the incorporation of the lean approach will be an increased capability of sharing information among various students. Thus, the academic growth of the individual students will have resulted from a combination of several ideas obtained from many people. This will thus make it easier for the teacher to be evaluated and therefore discard any unproductive traits that may have been used for teaching.

References

- Balzer, W. K. (2010). *Lean higher education: Increasing the value and performance of university processes*. New York: Productivity.
- Bonwell, C., & Eison, J. (1991). *Active learning: Creating excitement in the classroom* (ASHE-ERIC Higher Education Report No. 1). Washington, DC: George Washington University.
- Dahlgard, J.J., & Østergaard, P. (2000) *TQM and lean thinking in higher education" in M.N. Sinha, ed., The Best on Quality: Targets, Improvements, Systems, Volume 11 of International Academy for Quality Book Series, Milwaukee, pp. 203-226.*
- David E. Francis, (2014). *Lean and the learning organization in higher education*. Canadian Journal of Educational Administration and Policy, Issue #157, April 28, 2014
- Dukovska-Popovska¹, V. Hove-Madsen², & K.B. Nielsen³, (2014). *Teaching lean thinking through the game: some challenges*, Aalborg University, Department of Production, DK-9220 Aalborg, Denmark Education. Retrieved from <https://youtu.be/MtC4WToqVv0>

- Eisenmann T., & Ries E and Dillard S (2011). *Hypothesis-driven Entrepreneurship: the lean startup Harvard Business School Background* Note 812-095
- Flumerfelt, S., & Green, G. (2013). *Using Lean in the Flipped Classroom for At-Risk Students*. Educational Technology & Society, 16 (1), 356–366.
- Hines, P., Holweg, M., & Rich, N. (2004), '*Learning to evolve: A review of contemporary lean thinking*, *International Journal of Operations & Production Management*, vol. 24 no.10, pp. 994-1011.
- Keyte, B., & Locher, D. (2004). *The complete lean enterprise: Value stream mapping for administrative and office processes*. New York, NY: Productivity Press.
- Leavitt. (n.d.). Retrieved Jan20, 2017, from <http://www.leanvet.eu/>
- Liker, J. (2004). *The Toyota Way, 14 management principles from the world's greatest manufacturer*. New York: Mc-Graw-Hill.
- Monden, Y. (1983). *The Toyota Production System*, Productivity Press
- Netland, T. (2017). *Lean in the primary school? Better operations* Norwegian October 8, 2015, Web.
- Ohno, T. (1988). *The Toyota Production System: Beyond Large-Scale Production*, Productivity Press, OR.
- Shingo, S. (1988). *Non-Stock Production: The Shingo System for Continuous*.
- Tsao, C., Azambuja, M., Hamzeh, F., Menches, C., Rybkowski, Z. (2013). *Teaching lean construction – perspectives on theory and practice*. Proceedings IGLC-21, 977-986. Fortaleza, Brazil.
- Tatikonda, M.V. (2007). Product development performance measurement. In: Loch, C., Kavadias, S. (Eds.), *The Handbook of New Product Development*. Elsevier Publishers, Oxford, United Kingdom
- Ziskovsky, B., & Ziskovsky, J. (2007). *Doing more with less—Going lean in education. Lean education enterprises*.
- Zivkosky, B. M., & Zivkosky J. (2007). *Applying process improvement to K-12 education [Whitepaper]*. Cambridge, MA: Lean Enterprise Education.

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