



“Archetypal Case Study of Pupil Service learning in the Paddock of Challenging and destitute Community Based Organizations”

¹Dr. Mallikarjuna B E

Selection Senior Grade Lecturer

¹Department of Mechanical Engineering

¹DTE, Bengaluru, Karnataka

Email: replypgps@gmail.com.

ORCID  : ¹<https://orcid.org/0000-0003-4805-5716>

ABSTRACT

In sight of mechanical engineering aspects, here our students have undergone for two weeks industrial training in a well-regarded industry; there they have applied their class room learning skills in needy community organizations. In which they have resolved the evils which are being associated with machine tools and worker’s environment. There they found the satisfactory results after applying class room learning. The acceptable discussions have recounted in impending section of this paper.

Keywords: Service Learning, Environmental Factors, Community Problem

I. INTRODUCTION

In the prospects of professionalism, we come across new innovative things in our day-to-day activities. One can also say that activity or an event must be done by a person who knows the real factual things associated with that activity. In the light of growing science and technology the exposure of an existing academics towards science and technology are to be enhanced by framing the students or pupil in accordance with current technology. So as far as student academics concerned, academic skills which would be taught by faculty to a student must ensure the ability of pupil towards the solving community real life problems by way of facilitating the resources, making projects related to the community, analyzing the problems of community. So as far as ethical knowledge is concerned the service learning is non paid activity, in which service is provided to the community, non-profitable institutions, and charitable organizations by the pupil as per class room instructions, academics should not be limited to certain purview, which must be emerged as a ray of light to design and revolutionize the pupil or student mindset beyond the academic purview. One can scrutinize that service learning is different from volunteer, because in service learning the faculty shall provide an opportunity to the pupil to solve the real-life problems of a community by applying pupil classroom skills. So, in this regard the involvement of pupil plays an imperative role to enable the service-learning process, in which pupil will undergo for community works during their study tenure. As far as community knowledge is concerned, they face problems on respective zone. However, some solutions are obtainable or some solutions are not obtainable. The service combines community service with classroom instruction, focusing on critical and reflective thinking as well as personal and civic responsibility. It engages students in educational process what they learn in the classroom to solve real-life problems. Students not only learn about democracy and citizenship, they actively contributing citizens and community members through the service they perform through experiential learning, research, presentation skills and reflection. The partnership built between community, students, faculty are reciprocal meaning shared responsibility and gain helping students address local needs while developing their academic skills and commitment to their community. Service learning is needed to promote the numerous academic skills, problem analysis, critical thinking, logical reasoning, detailed observation, issue identification. And it also enhances the student learning skills, student retention. By way of doing this it encourages student to engage with civic. So, in this respect, we have espoused service-learning process in which students have undergone to resolve the community-based problems in an effective and efficient manner. We have assigned several tasks to the students of final year



mechanical engineering in which students have obtained exceptional problem solving and problem analyzing qualities together.

II. SELECTION OF COMMUNITY PROBLEM

In this educational approach six students of final year mechanical engineering have visited nearly 10 industrial organizations which are well known across the Ballari (Karnataka, India) city for producing qualitative products. Thereafter industrial organizations have permitted them to undergo for solving the problems which are faced by the workers and organizational members. Students have observed the terms and conditions which are prescribed by the organization. And also, they have undergone for the technical and non-technical observation for a known period of time. After students have analyzed several problems which are being associated with technical work. Each student has made a report to the department head in the course of their technical observation. Students are given an opportunity to resolve the technical evils or troubles which are commonly being faced by the machine worker or operator. In addition to these students have noted down the technical specifications of the several machine tools, furnaces, boiler temperatures, machine tool equipment's and many more and their desired results and contentment which have been found by the students have been expounded in impending section.

III. PROBLEMS IDENTIFICATION

As we stated earlier that the students have undergone for the technical and non-technical observation in which students have noticed and identified several problems in community based industrial organizations (Industry name X, Y, Z) Which are linked to technical and non-technical problems. The major evils or problems have identified by the student are as follows:

- Machine Tool Problem (Technical)
- Working Environment (Non –Technical)

So, in this respect, the students have reported the problems to the department head by way of showing the data which are noted down by them. Initially, students have taught very well about academic subjects which are related to aforementioned ones. Right from the beginning we have provided encouragement to the students to provide the solution for the aforementioned community problem. Three students have provided the solution for the technical problem and remaining three students have provided solution for the non-technical problem.

A.) Machine Tool Problem (Technical)

Usually, the operators while performing the machining operations they take lot of care over the machine tool. Our students have observed lathe machine tool which has chuck part for holding the job, tailstock for supporting other ends of the work piece and many more. In order to adjust the chuck according to the work piece diameter, operators would use align key, so for tightening and loosening purpose. align key plays an imperative role, the time taken by the align key for adjusting the chuck material would be more, in turns leads to increase production lead times. So, our Pupils have provided solution to aforesaid problems by way of fixing the spanner material over the align key, in which the operation for tightening and loosening the lathe parts can be adjusted so easily by this method.

B.) Working Environment (Non-Technical)

The second evils which has observed by students are working environment evils, where the members of the organizations are not maintained proper relationship with their colleagues and workers. This leads to de-motivate the workers towards failure of the working operations. And it imposes more over the customer requirements, leading to declining in the production rate of an industry. So, our students have provided solution to the members of organization, in which they have made an arrangement for teaching a Professional ethics and morality subjects to the workers and members. Gradually, the workers have stricken to involve in solving their problem themselves by way of tutor the ethical subjects, which have taught by our mechanical students. In the long run, our students found the desired solution for the non-technical evils. After defrayal the non-technical problems, the pupils have undergone for the two weeks non-technical. observation, in which they have found the smooth functioning of the organization and the workers and organizational members have maintained supportive relationship within the organization. So, the changes of the workers have been recorded and maintained in the organization directory file.

IV. RESULTS AND DISCUSSIONS

For being involved in any work in an industry, the service-learning guidelines have to follow by employee or workers. Many of us have known that service learning is a non-paid activity, in which service is provided on voluntary basis to public, non-profitable organizations, charitable organizations and many more. Service learning plays a crucial role to maintain friendliness between colleagues in an organization. Also, the service learning includes the training and study of real-life problems and gives best possible



solution. The service learning could consist of characteristics of the work, basic requirements, security of the job, awareness of the procedures while taking decisions and actions. Therefore, our students have made report to save the production time of machine tool (Lathe) and the graph of time vs. Lathe part have shown in below Fig. 1.1

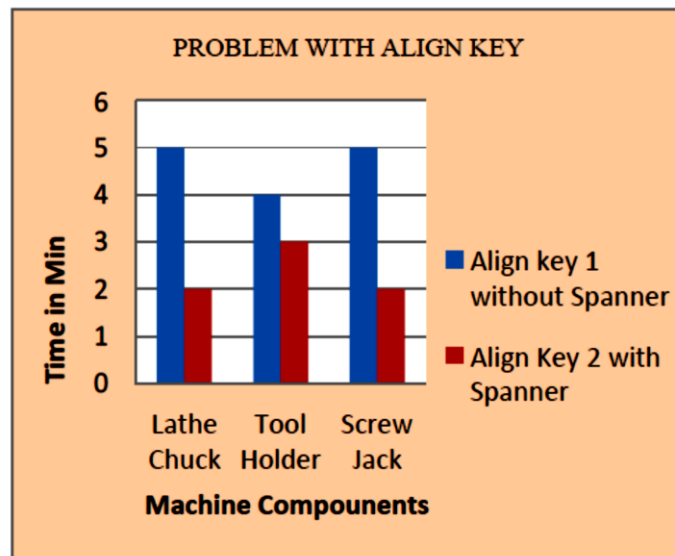


Fig.1.1: Problem with Mechanical Element

From Fig.1.1 one can notice that, without assistance of spanner the production time for quite a lot of mechanical components higher. And also, our Students have noticed that with assistance of spanner the production time has got decreased for all mechanical components. In this regard screw jack component has least consumption time compared to other two mechanical components.

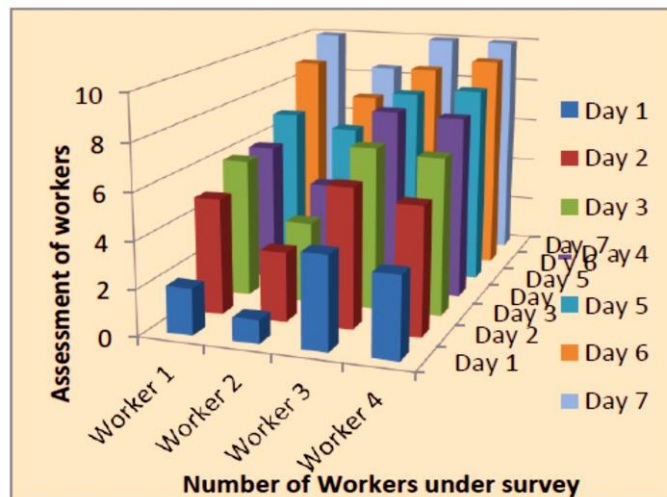


Fig.1.2: Problem with workers mutual relationship



From Fig. 1.2 one can observe that, the behavioral changes of the workers have increased little by little after providing gradual ethical teaching. However, the second worker has not attained the desired level as like other three workers. So, the quality of industrial environment somewhat better compared to earlier one.

CONCLUSIONS

As per the observations which have been carried out by our students the following conclusions are drawn.

- 1 The Production time of each mechanical component has reduced.
- 2 It has saved the worker's time.
- 3 Attitude and way of thinking of the workers have changed and behaves smoothly.
- 4 They have maintained ethical and respectable relationship with customers.

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