

Human Resource Development in Construction Industry

Behnam Neyestani

Introduction

Human Resource Development (HRD) is the domain that performs core function in an organization for the advancement of personal and professional skills, knowledge and abilities of employees. Human resource development includes such opportunities as employee training, employee career development, performance management and development, coaching, mentoring, succession planning, key employee identification and organization development. HRD has the key role in improving knowledge and skills on human resource in any organization. HR professionals are very important for the organization. The main target of human resource development is on fostering the workforce so that the company as well as employees can achieve their work goals and objective to maximum satisfaction.

The companies implement a planned development of human resources needed for the company to grow and actively support their employees in the voluntary development of their skills with the aim of achieving growth for both the company and our employees.

Nowadays, managers believe that the employees are the most important management resources. Managers are aiming to achieve growth for both the company and employees by actively supporting the growth of each individual employee and developing human resources who are equipped with skills and experience required to work at the organization. Managers approach human resources development from the three areas such as:

- 1) Planned Human Resource Development which is to implement planned development to foster and secure the human resources needed to achieve the management vision (e.g., growth strategy, business continuity, creation of corporate culture);
- 2) Skill Development which is tasked to develop on individual employees their skills and increase their market value, and;
- 3) Career Development which is a continuous lifelong process of developmental experiences that focus on seeking, obtaining and processing information about self, occupational and educational alternatives, life styles and role options support medium to long-term career development and promote growth toward employees' ideals.

According to Figure 1, HRD aims to promote comprehensive education incorporating the perspectives of training system, On-the-Job Training (OJT), medium to long-term career path development of human resource systems to support these programs.

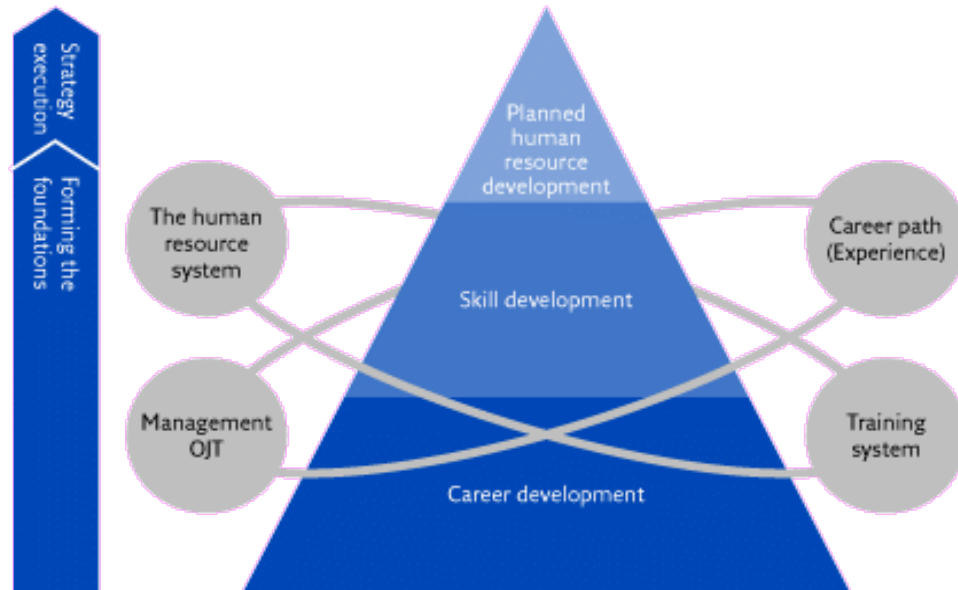


Figure 1: Human Resources Development Model

Organizations have many opportunities for human resources or employee development, both within and outside of the workplace. Human Resource Development can be both ceremonial as well as casual ranging from classroom training sessions and college course and an organizational scheduled change effort to casual mentoring of subordinates by their superiors. Organizations that intend to grow and become sophisticate utilize an extensive portion of their resources in human resource development.

Human resource development is directed towards changing an organization and everyone associated with it from within, in order to gain advantage over its competitors and ultimately achieving great amount of success. It also caters the need for employee talent and skill development within an organization. Talent and skills development are important components of Human Resource Development.

Equipping employees with technical skills that are required to perform specific tasks with soft skills such as leadership, communication, time management and others actually enhances the performances of these individuals and ultimately benefits the organization in the long run. This also adds to employee satisfaction, as learning something new boosts up their energy level and not only makes them better employees but rather better human beings.

More and more companies are acquainting themselves with concepts of talent development or training and development from HRD. Talent development accumulates a vast array of elements such as organizational development, training and development, career development and the workplace management and etc. There is an increasing need for individuals to take charge of the development of their own learning and careers for a variety of reasons and also there is an increasing rate of change of the organizations and in the knowledge and skills. Top management and executives need to genuinely realize the strategic importance of HRD as a value-added source for sustained competitive advantage. Human resource managers who were in charge of the design and implementation of the business development needed to focus on the corporate business vision and long-term growth strategies to get more productivity and profit for their companies.

There are numerous factors affecting employee's performance and productivity in construction site and generally these factors are manifested to affect in the construction at large. There are also several factors that influence employee's performance and productivity in construction company. "Productivity improvement in construction is best understood when the construction process is visualized as a

complete system” (Dozzi and AbouRizk, 1993), as shown in Figure 2, the system is made up of the construction project.

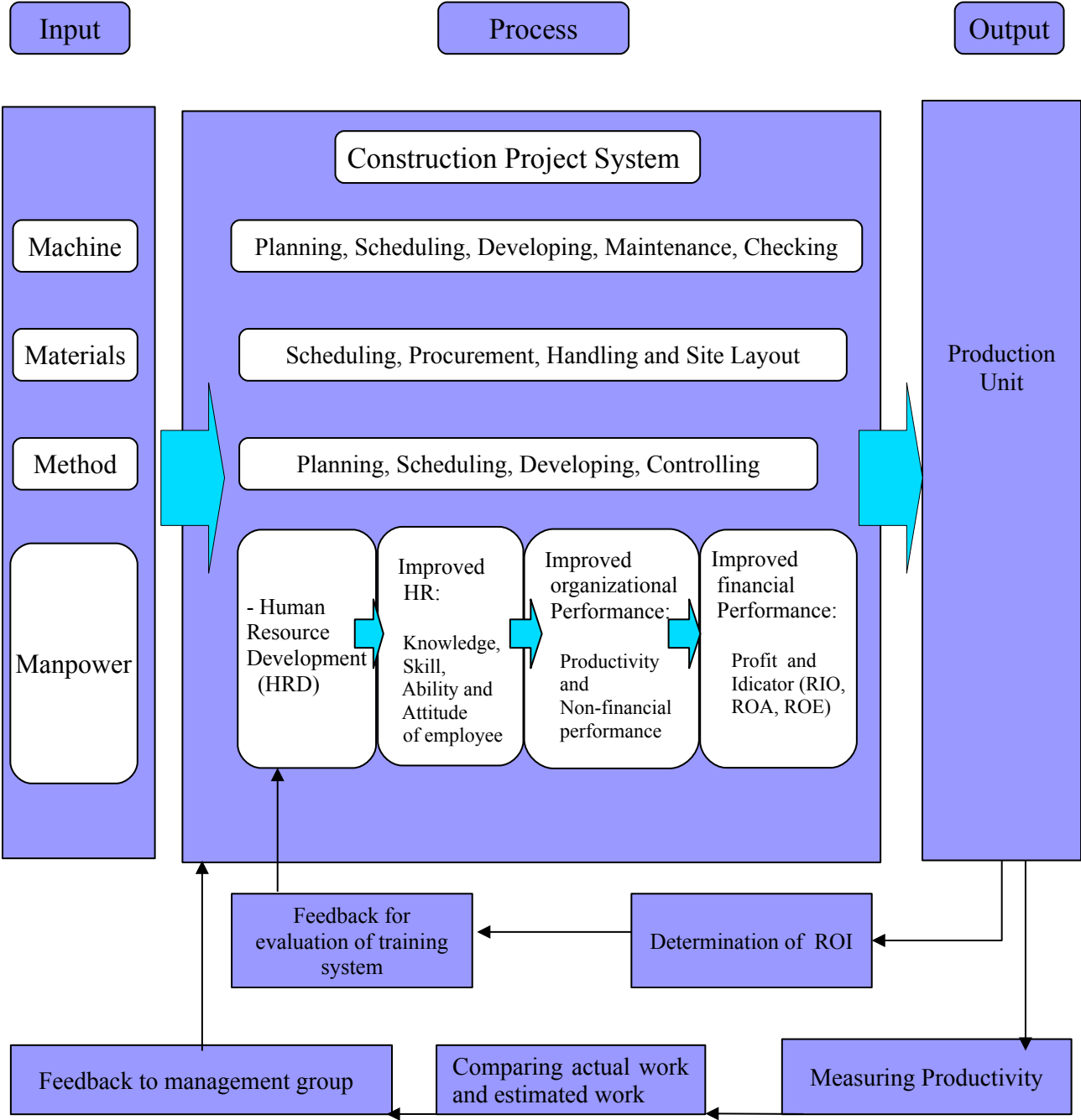


Figure 2: Modified Framework Improvement of Firm Performance in Construction

According to Figure 2, the construction system can be described as an IPO (Input, Process, Output) system. There are four elements in Input (Machine, Materials, Methods, Manpower) of this system and Manpower is the most important factor among them and the organization can use and consume properly other factors are left by promoting and improving HR or manpower, and human resource development is the main way to achieve this target (improving HR). This system shows the stages of improving HR by HRD through construction project system HRD can cause improving step by step firm performance in construction company, these stages are included:

1. Improvement of HR outcome: Improved knowledge, ability, skills, employee's behaviour;
2. Improvement of organization performance outcome: Non-financial performance (employee's satisfaction, time, absence, change of organization culture, increasing revenue);
3. The increase of productivity and finally;
4. The increase of financial outcome: improved profitability.

Finally, improvement of skills and behaviour of employees help change both employees and companies in a good situation. Clearly, HRD can generate more efficiency for staffs and the company toward improving employee's performance and the company productivity. Much researches into HRD were concerned with the effectiveness of training on the companies and employees.

This study tried to find and realize all factors which are caused by HRD on productivity and employee's performance in construction industry, for getting this aim the researcher used recent local and foreign studies about the impact human resource development on productivity and employee's performance in construction companies. HRD can be both ceremonial as well as casual ranging from classroom training sessions and college courses, and an organizational scheduled change effort, to casual mentoring of subordinates by their superiors. Organizations that intend to grow and sophisticate utilize an extensive portion of their resources in Human Resource Development which is directed towards changing an organization and everyone associated with it from within, in order to gain advantage over its competitors and ultimately achieving great amount of success. It also caters the need for employee talent and skill development within an organization.

Talent and Skills Development are important components of human resource development. To equip employees, alongside technical skills that are required to perform specific tasks, with soft skills such as leadership, communication, time management and so on and so forth actually enhances the performances of these individuals ultimately benefiting the organization in the long run. This also adds to employee satisfaction, as learning something new boots up their energy level and not only makes them better employees but rather better human beings.

These more and more companies are acquainting themselves with concepts of talent development or training and development. Talent development accumulates a vast array of elements such as organizational development, training

and development, career development and workplace management and etc. It is said that during the 21st century more organizations will be focusing on talent management and development. Human resource development as a process occurs within employees and organizations:

- 1) Training and Development (TD): The development of human expertise for the purpose of improving employee's performance;
- 2) Organizational Development (OD): Empowering the organization to take advantage of its human resource capital;

The companies should improve continually employee's skills and attitude to ensure enforcing optimal performance in the workplace.

Training and Development in Construction Industry

Nowadays, organizations know proper training needs to establish a proper system. Training is referred to as a systematic approach to learning and development to improve individual, team, and organizational effectiveness (Goldstein and Ford 2002). Training is the systematic development of the attitude and skill behavior pattern required by an individual in order to perform adequately a given task. "It is also the systematic modification of behavior through learning which occurs as a result of education instruction development and planned experiences" (Oliseh, 2005). Training tried to change the behavior of the employee in the work place to increase employee's skills according to standard which exists in the company. The organizations usually implement training when they want to change

process of manufacturing or service, training for new skills gives opportunity for better career paths (within the company or in the labor market), higher income and employability.

Manpower training and development has the key role in improving knowledge and skills on human resource in any organization. HR professionals are very important for the organization. Training can bring them at par with the organization's goals and attuned with the industry trends is necessary. The companies should improve continually employee's skills and attitude by training and manpower development to ensure enforcing optimal performance. As shown in Figure 3, manpower training and development can change and improve the level of ability and attitude of the employees in the workplace.

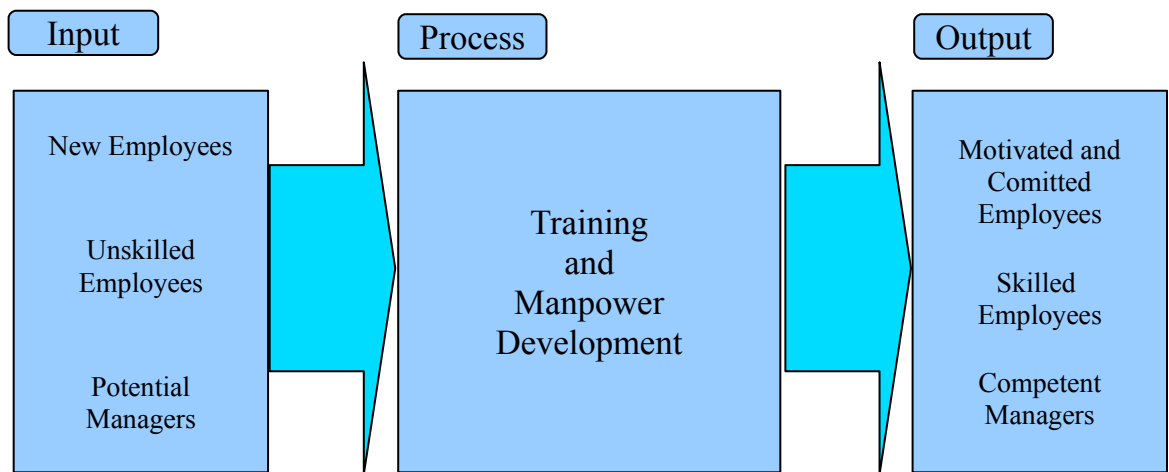


Figure 3: Input-Process-Output (IPO) of Manpower Training's Model

Also, training and manpower development undoubtedly lead employee to better productivity through improved technical and managerial skills and better morale within the workforce. The creation of a culture of training and manpower development within an organization confirms within the minds of staff that they are worthy part of the construction company. The culture of an enterprise is one of the hardest aspects to manage; staff training and manpower development have the power to change organizational culture for the better situation in construction company. According to David (2008) "Many managers understand the value of a skilled workforce, many companies fail to realize the benefits that minimal improvements in employee skills by training can make in an organization". According to many studies, implementation of training system in company can improve some factors in the company such as performance improvement, increased productivity, increased profit, improved satisfaction of employees, increased employee moral and increased revenue.

As shown in Figure 4, the effectiveness of training and manpower development can improve the job satisfaction, technical skills, enhancement of salary and change the company culture to a proper level that company can compete with other companies as well as owners or contractors or HRM expected. These changes can help to increase and improve profit, productivity and employee's performance in a construction company.

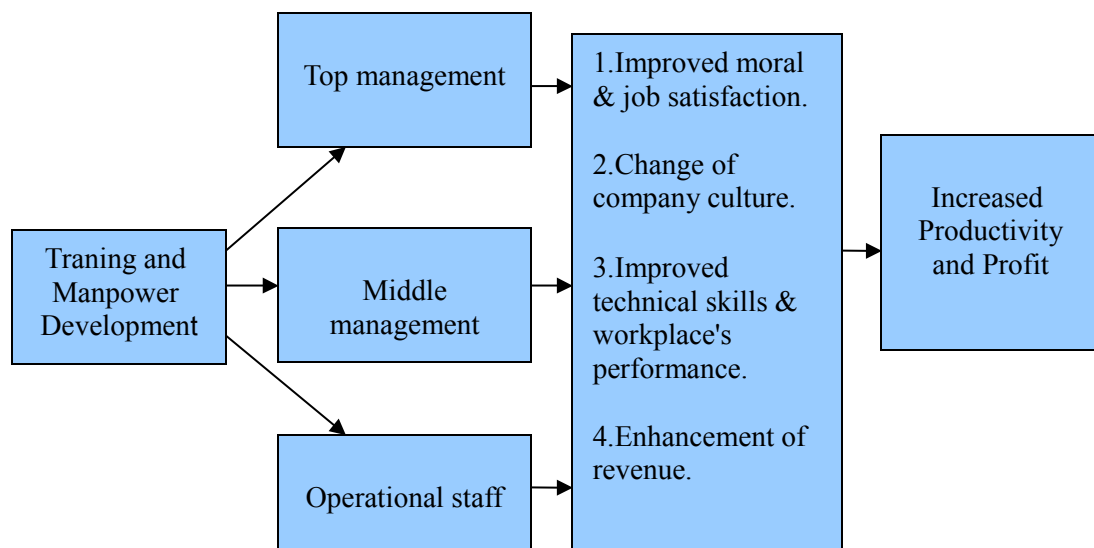


Figure 4: Detailed Relationship Between Training System and Productivity

According to Training Magazine (2004), when senior executives were asked the most important training initiatives, 77% cited aligning learning strategies with business goals; 75% cited ensuring learning content meets the workforce requirements; and 72%, boosting productivity and agility in the companies. So, most managers know training has had significance for company improvement. Doubtlessly, training and manpower development has important role on series of factors which can nicely enable to increase productivity in the workplace. “The results indicate that employee's training is one of the functions that consistently over the years are perceived as having considerable room for productivity improvement” (Arditi and Mochtar, 2000). The companies need to have a proper system for the implementation of manpower training and development, as using Instructional System Design

(ISD) and Instructional Design (ID) in the construction companies that are able to know and design a good instructional system in projects, it is necessary to establish this intellectual education system for companies to get most benefit from training.

Training Needs Assessment in Construction Training

Before the implementation of the training system the managers must be able to know their employee's needs concerning training. And "training needs are initially identified by reviewing regulatory requirements and existing training programs, and/or conducting a needs analysis" (Yoder,1993). According to Chang and Chiang (2011) TNA (Training Needs Assessment) is a process of confirming the knowledge and technology necessary for achieving organizational goals, and it is necessary to provide the employees through training, and which training should be provided". This process must continuously effort to find the existing needs of the organization concerning training to achieve organizational development goals. This analysis for training needs is usually included: The three levels are organizational level, operational and individual level.

According to Warshauer (1988), a good TNA provides the following benefits such as: 1) increasing the commitment of the management to enable participants to participate in training and development continuously; 2) increasing the visibility of training functions; 3) elaborating critical organizational issues; 4) making the best use of limited organizational resources; 5) providing training courses and Training

design ideas; 6) providing employees with knowledge and skills for performing their duties; 7) helping an organization find the goal of performance, and; 8) improving employee relations and morale.

Training system in any organization and industry must be strictly emphasized to know its aims concerning employees then when the organization could know it by analyzing training needs, so the organization can be able to go to the next level of training system after knowing what its mission is.

Design, Development, Implementation, Evaluation and Financial Assessment of the Training System

The design phase conceptualises the project, the phase involves learning objectives, assessment tools, exercises, content, subject matter analysis, learning sequence and media asset selection. Design is an important part of a training manpower development in HR because after analyzing the training needs of employees, the organization must be able to plan a proper system to achieve the aims of the organization. Then the company can realize which way and designed program is an opportunity for employees and target company. According to Yoder (1993) the design of training includes:

1. Self-paced instruction: This is any form of instruction that does not require the presence of an instructor at the training setting. However, feedback must be provided;
2. On-the-job training (OJT): This relates to formal training on the job. A worker becomes experienced on the job over time due to modification of job behavior at the point of training or acquisition of skills;

3. Classroom: training presented to groups of various sizes, typified by stand up lecture, seminar, or group interaction. Classroom instruction works well for presentation of fundamental and basic theoretical knowledge, and;

4. Laboratory/Workshop: training that emphasizes hands on practical experience in a controlled environment.

This step establishes the development of current job descriptions and standards and procedures. Job descriptions should be clear and concise and may serve as a major training tool for the identification of guidelines. Once the job description is completed, a complete list of standards and procedures should be established from each responsibility outlined in the job description. This will standardize the necessary guidelines for any future training. Also, the development phase involves the creation of the learning objects or course based on the completed storyboards. According to Yoder (1993) training methods selected should be based on the objectives and settings for the course, training methods are techniques of communicating instructional material to trainees.

These materials are references, info packs, case studies, movies, games, and other visual aids. This is also a great time to ensure that feedback from previous sessions is included. If the attendees are bored, they will not stay engaged with the facilitator. If attendees are disengaged, they will absorb less knowledge. Keep them engaged with activities such as trivia questions, interactive exercises, and group discussions. It is a proven fact that engagement raises knowledge retention. The developers create and assemble the content assets and the programmers build the

functions and integrate the assets, testers complete User Acceptance Testing (UAT) and debugging occurs. Project variations are applied and the release occurs after approval.

The implementation phase involves the development of documentation, user guides and training manuals. The documentation covers the course curriculum, learning outcomes, navigation, assessment and learning tools. This process is one of the important parts of training system and it must be delivered properly to employees. According to Yoder (1993), activities of implementation are:

1. Conduct training: If specified in the training development and administrative guide, trainees should be pretested to ensure that they are adequately prepared. Trainee performance should be monitored and evaluated during training;

2. Conduct in training evaluation: During training, data should be collected for subsequent use in evaluating and improving training program effectiveness. Evaluation information is collected from test performance data, instructor critiques and trainee critiques, and;

3. Document training: The documentation of training includes preparing, distributing, storing, controlling, and retrieving records and reports that address the training program and trainee participation.

The evaluation of training usually exists through each stage of training system. According to the Model of the Training Process, from first to the last part, this system has satisfied well the organization concerning its needs. An evaluation model for Project Management Training Programs is necessary to administer the training system according to aims of project management for promotion of HR in construction industry, and evaluation must have achieved three main objectives (Sharon, 2009):

- 1) Assess if intended learning and development objectives have been met, and;
- 2) Continuous improvement of learning and development, and; 3) Assess whether resources are used wisely.

The Evaluation Phase consists of two parts: formative and summative. Formative evaluation is present in each stage of the ISD process. Summative evaluation consists of tests designed for domain specific criterion referenced items and provides opportunities for feedback from the users. All system outputs are a direct reflection of inputs, processes, and adjustments. The training process is no different. If the outputs of the program are less than desired, then changes to the program may be necessary. Companies should establish a systematic evaluation process to enhance the effectiveness of the training (Warshauer, 1988). The evaluation of the program should occur in two phases (Yoder, 1993):

- 1) Immediately after the program, and;
- 2) Some period later (for instance 6 months).

The evaluation performed immediately after the program serves to correct urgent training issues such as incorrect data. This is also the time to concentrate on instructor techniques. The later evaluation determines whether the training enhanced employee and/or company performance. Figure 5 depicts the different phases and their relationships, training delivery methods consist of the techniques and materials used by trainers to structure learning experiences. Rapid prototyping involves the process of receiving continual or formative feedback while instructional materials are

being developed. Rapid prototyping develops learning experiences in a continual design-evaluation process, known as the spiral cycle. The iterative approach means that courses are continually improved as the cycle continues (Sharon, 2009).

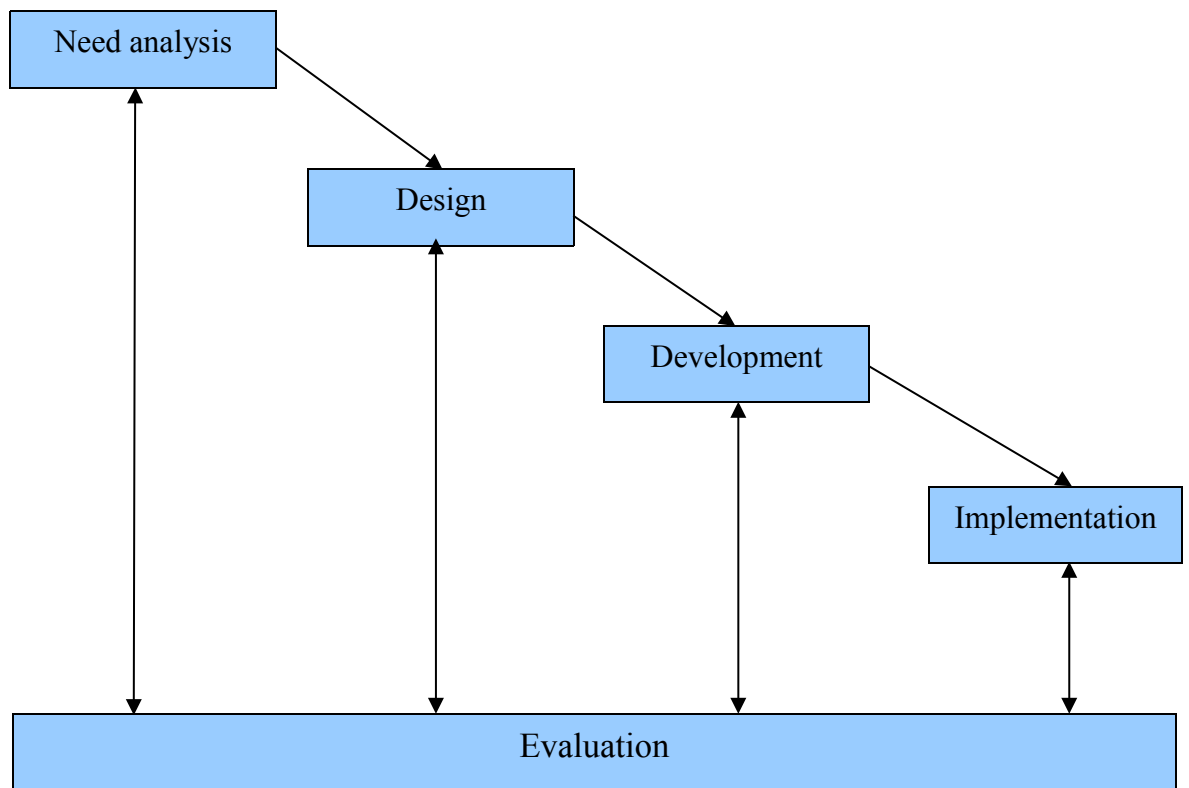


Figure 5: Model of the Training Process

The organization can assess its training system by some methods such as Kirkpatrick Model and Financial Assessment of training (ROI, ROE). One of the methods to assess training system is through the Kirkpatrick Model which described a series of articles on training evaluation by Donald Kirkpatrick in the 1960's where he identified four stages of evaluation. Despite its age, Kirkpatrick's model continues to be used in contemporary research which includes:

1) Reaction; 2) Learning; 3) Behavior, and; 4) Results.

Reaction of Kirkpatrick's Model was mostly concerned with the level of the learner's happiness with the learning program” (Rossett and Kendra, 2001). What this stage really needs is to ensure that the performance intervention (learning program) actually conforms to the individual requirements. “If the managers cannot convince employees that they need to learn the new tasks (motivation), then they probably never learn to perform correctly or once they complete the learning program” (Rossett and Kendra, 2001). They will probably not put their newly learned skills and knowledge to full use. Thus, the individual needs are the foundation of the Four Needs (Rossett and Kendra, 2001), as shown in Figure 6.



Figure 6: Kirkpatrick's Model

Financial Assessment is a useful way to assess training system in construction companies and can be used as an instrument to know improvement of productivity indirectly by computing of ROI or other methods of financial assessment. On the other hand, the measurement on investment can give us accurate information such as increases in levels of customer satisfaction, increase in productivity, time saved, improved teamwork and enhanced organization commitment (Sharon, 2009).

References

- Afshan, S. (2012). Impact of training on employee performance: A study of telecommunication sector in Pakistan. *Journal of Archives*, 249(6), pp.646-655.
- Alfred, M. (2003). Principles of economics (8th ed.). London: Macmillan Co.
- Allan, B. (2005). The Kirkpatrick/Phillips model for evaluating human resource development and training, Retrieved January 2013, from www.scribd.com/doc/132385661/The-Kirkpatrick-Phillips-Evaluation-Model-of-training (Accessed in 2013, Mar).
- Arditi, D., & Mochtar, K. (2000). Trends in Productivity Important in the US Construction Industry, *Construction Management and Economics*. Vol. 18, No. 1, pp.15–21, Retrieved from www.ingentaconnect.com (Accessed in 2013, January).
- ASCE (2003,Dec). Measuring productivity: An Industry challenge in civil engineering. *American Journal of Society for Civil Engineers*, 73(12), pp. 46-53.
- Black, S. E., & Lynch, M. (1996, May). A Study of Capital Investments and Productivity. *American Economic and Fiscal Journal*, 20(1), pp. 1–23.
- Claudia, B., & Katja, K. (2011, July). Continuous Training, Job Satisfaction and

Gender – An Empirical Analysis Using German Panel Data. *RUB Journal*, 265, pp.5-9.

David, L. (2008). [Review of the value of Training]. Copyright IBM Corporation. Retrieved from <http://.ibm.com/software/lotus/training> (Accessed in 2013, Dec).

Divina, M. E. (2007, Jan). Human Capital Development for Innovation in Asia: Training and Development Practices and Experiences of Large Philippine Companies. *Asian Journal of Technology Innovation*, 27(4), pp. 139-156.

Dozzi, S. P., & AbouRizk, M. (1993, Dec). [Review of Productivity in Construction]. Retrieved from <http://archive.nrc-cnrc.gc.ca/obj/irc/doc/pubs/nrcc37001.pdf> (Accessed in 2013, Dec).

Fagbenle, O., & Lawal, P. (2001). The Influence of training on Bricklayers' productivity in Nigeria. *International Journal of Management Sciences and Business*, 1(7),1-5.

Forsyth, J. E. (1997). [Review of the construction and validation of an instructional systems design model for community-based train-the-trainer instruction. Retrieved February 2012 from <http://www.worldcat.org/39136447/published/1997/pdf> (Accessed in 2012, Sept.).

Goldstein, I. & Kraiger, F. (2002). [Review of Benefits of Training and Development]. Retrieved from <http://www.annualreviews.org/123756788/pdf> (Accessed in 2013, Dec).

Gloria, J. A., & Flynn, L. (2000). Using the learning outcomes templat as an effective tool for evaluation. *Journal of Construction Education* Copyright, 5(3), pp. 244-259.

Gupta, K., & Attar, A. (2012, Sep). A Study of various factors affecting labour productivity and methods to improve it. *IOSR Journal of Mechanical and Civil Engineering*, 22(16), pp.11-4.

Hee-Sung, P. (2006, Aug). Conceptual framework of construction productivity

estimation. *KSCE Journal of Civil Engineering*, 10(5), pp. 311-317.

Herman, J. & Kurt, K. (2009, Jan). [Review psychology on benefits of training for individual and teams in construction]. pp. 451–74.

Kabajeh, M., & AL-nu'aimat A. (2012, June). The relationship between the ROA, ROE and ROI Ratios with Jordanian insurance public companies market share prices. *International Journal of Humanities and Social Science*, 2 (11), pp. 51-59.

Kay, B. J. (2007, June). [Review of human resource development :training failure as a consequence of organizational culture]. *IHR Journal*, 6(2), pp. 142–163.

Leedy, P. D., & Ormrod, J. E. (2001). *Practical research: Planning and design*. (7thed.). New Yeark: Prentice Hall.

Leoncio, P. A. (2000, June). [Review of Technology Audit for Labor-Based/Equipment Supported Infrastructure Projects in the Philippines]. International Labor Organization Online. Retrieved from www.ilo.org/public/english/employment/download/technau.pdf (Accessed in 2012, June).

Lethi, T. (2005, Aug). [Review of Human Resource Development and Poverty in the Philippines]. *Dlsu.edu* Online. Retrieved from <http://www.dlsu.org/library/1345678990/pdf> (Accessed in 2013, Aug).

Liong, L. P. (2005). [Review of proposed monitoring system for training of the Philippines national housing authority]. Online. Retrieved August, 2013 from http://essay.utwente.nl/55730/1/Scriptie_Liong.pdf.

Melanie, K., & Richard, J. (2004).[Review of Training, Job Satisfaction and Workplace Perf in Britain]. *Wiley Library Online*, 23(1), pp. 139-75.

Miape, T., & Julius, C. (2008-2010). [Review of ILO/SKILLS-AP/Japan Regional Workshop and Study Program on Skills Training in the Workplace, Country Paper on Skills Training in the Workplace – Philippine Experience]. International Labor Organization Online. Retrieved from <http://www.ilo.org>.

- Muhammad, A., & Easha, M. (2013, Oct). The Impact of Perceptions of Training on Employee Commitment and Turnover Intention: Evidence from Pakistan. *International Journal of Human Resource Studies*, 3(1), pp. 74-84.
- Nunnally, S. (2001). Construction methods and management, (5th ed.). Upper Saddle River (NJ): Hardcover Press.
- Oko, A. J. (2011). Study of relationship between time overrun and productivity in construction sites. *International Journal of Construction Supply Chain Management*, 1(1), pp. 57-68.
- Ooi, K. B., & Veeri, A. (2006). The influence of corporate culture on organizational commitment case Study of semiconductor organizations in malasya. *Sunway Academic Journal*, 3(1), pp. 99–115.
- Patrick, B., Ison, G., & Mohamed, S. (2008). Trends of skills and productivity in the UK construction industry, engineering, construction and architectural management. *Emerald Insight Journal*, 15(4), pp. 372-382.
- Phillips, J. (1997). Review of return on investment in training and performance improvement programs. houston]. *Emerald Insight Journal*, 27(6), pp. 477-485.
- Rossett, S., & Kendra, S. (2001, May). [Review of A Dollar Invested by a Company in Education was More than Twice as Effective in Boosting the Firm's Productivity as a Dollar Invested in New Machinery. Retrieved from <http://www.nwlink.com/~donclark/hrd/sat2.html> (Accessed in 2012, May).
- Sharon, P. D. (2004, Oct). [Review of Industry Training and Productivity]. a literature review in the NZIER institute. Retrieved from <http://www.nzier.org.nz> (Accessed in 2013, Oct).
- Sibal, J. (2004, May). [Review of the APO survey on in company training strategies for Knowledge Workers APO]. Asia Productivity Organization Online. Retrieved may 2, 2013 from www.apo-tokyo.org/publications/files/ind-2-tkw.pdf.

- Steven, W. S. (2004, Oct). [Review of the relationship between satisfaction with on-the-job training and overall job satisfaction]. Scholarwork.ipi Online. Retrieved may 2014 from <http://www.scholarwork.ipiedu/handle123/pdf>
- Suganya, S. (2011,sep). [Review of how to measure employee productivity]. Buzzle Online. Retrieved july 21, 2014 from <http://www.buzzle.com/articles/how-to-measure-employee-productivity.html> (Accessed in 2013. Sep.).
- Sullivan, J. (2011, May). [Review of Increasing Employee Productivity: The Strategic Role That HR Essentially]. Retrieved from <http://www.ere.net/2011/05/16/increasing-employee-productivity-the-strategic-role-that-hr/pdf> (Accessed in 2012, May).
- Supangco, V. T. (2011). [Review of Strategic HR Practices in Some Organizations in the Philippines]. *Management and Business Journal*, 19(23), pp.35-48.
- Thomas, M., & Yiakoumis, J. (1987). Factor model of construction productivity, *Journal of Construction Engineering and Management, ASCE*, 138(2), pp. 98-159.
- Volkman, B., et al. Blogger (2011). 101 Ways to Improve Construction Productivity. Retrieved from <http://www.blogger.com/profile/05000061347046054204> (Accessed in 2013, Apil).
- Warshauer, S. (1988). *Inside training & development: Creating effective programs*. San Diego, CA: University Associates.
- Willis, J. W. (2007). *Foundations of qualitative research: Interpretive and critical approaches*. Thousand Oaks, CA: Sage Publications.
- Woo, S. K. (1999). *Monte carlo simulation of labor performance during overtime and its impact on project duration*. Austin, TX: Engineering Publications.
- World Bank (2010). *Philippines Skills Report Skills for the Labor Market in the Philippines*, Human Development Department East Asia and Pacific Region Document of the World Bank, from http://www.aboutphilippines.ph/filer/HigherEd_Philippines_SkillsReport.pdf

(Accessed in 2013, May)

Yoder J. (1993). *Training Program Handbook: A Systematic Approach to Training*.
Washington, DC: Eaglebrain Publications.