INSTITUTE-INDUSTRY LINKAGE : TODAY AND TOMORROW

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ABSTRACT

This paper has emphasized that Institute-Industry linkage (IIL) can play, in terms of Socio-techno-economic considerations, a significant role in promoting national prosperity. A model describing the major components ofeducation system has been presented. It has been piointed out that IIL will have to play a vital role in making the education system more effective. Over twenty IIL components, with their today's status and tomorrow's expectations, have been identified. The paper, it is belived, can generate interest amongst all concerrned, namely, educationists, management, teachers, government, industry and national leaderrs.

INTRODUCTION

Socio-techno-economic considerations can play a vital role in promoting national well-being and welfare. It has been widely accepted that industrialization is one of the major tools which shapes the national destiny. Naturally, attempts are being made in India through government and non-government agencies for promoting industrialization. One of these important agencies is technical institutes, like, polytechnics, engineering colleges and other technical institutes. Recent publications, such as, New Education Policy, the Promised Programme of Action, etc., have laid down emphasis on institute-industry linkage (IIL) [1, 2, 3, 4, 5]. The proposed model of the education system presented in the next section can help us understand the importance of IIL.

A MODEL FOR EDUCATION SYSTEM [5, 6]

The education system comprises of the following major components:

- Curriculum;
- Students;
- Faculty, supporting and administrative staff;
- Management;
- Examination; and
- Government.

The ultimate objective of the education system is to turn the young generation into good citizens of a country having firm belief in certain right values which can create amonst them better intellectual poise, mental stability, happiness, etc., and thus, ultimately leading to national prosperity [1, 7]. This can be achieved by setting certain goals for the agencies involved in imparting instructions to the young generation. The major goals could be to generate the followings amongst the young generation [6. 8]:

- Intergrity and honesty;

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- Human relation skill;
- Technical skill; and
- Ability for problem handling.

Keeping in view the above points, Figure 1 presents a model for education system.

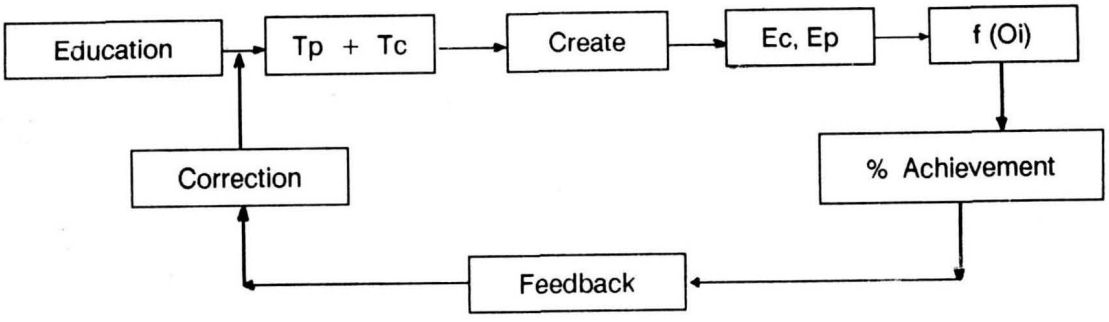

Figure 1 . A Model for Education System [6].

The model can be explained using the following expressions.

Education System = [(Tp + Tc)--> (Ec + Ep)] f(01.02,03,04,05) ..... (1)

Where,

Tp : Practical/ Tutorial teaching.

Tc : Theory class room teaching.

Ec : Conceptual enviroment

Ep : Physical environment.

01 : Students' goals.

02 : Teachers' goals.

03 : Institute (management) goals.

04 : Industry goals.

05 : National/local goals.

The component (Tc + Tp) can further be expressed into six subcomponents as given below :

Tp + Tc = W1 * (Curriculum) + W2 * (Student's ability) + W3 * (Teachers's ability) + W4 *(Management abilitty) + W5 * (Industry needs) + W6 (National / local needs) ..... (2)

Where,

Wi :Weightage, $i = 1,2,..6$ and $\sum_{i=1}^{6} W_i = 1$

The acheivement of the education system (AES) can be expressed as :

$$AES = \sum_{i=1}^{5} Pi = 1 \quad \text{..... (3)}$$

Where,

Pi : Percentage achievement of the ith goal.

0i : The ith goal.

Education System Acts (ESA) can be considered as a function of Ois and can be expressed as :

ESA = f (01, 02, 03, 04 05) ..... (4)

These goals are interdependent and closely interrelated. Each of these is funtionally related to the remaining ones, and can be expressed as given below :

O1 = f (02, 03, 04, 05) ..... (5)

Now, one of the important indicators to judge the performance of the education system can be considered in terms of the degree of students' morale in an institute. Students' morale is linked up with the name and status of the institute, and its infrastructure. Thus, the prevalent concerptual environment (Ec) and physical environment (Ep) in an institute can play a predominant role in building up such morale. Naturally a sound design of the (Tc+Tp) component can help generate requisite Ec and Ep. In turn, the status of Ep and Ec can be judged by the extent students can meet the nation's present and future requirements. For meeting these requirements, institute-industry linkage (IIL) can play a vital role. The need for designing more effective III is presented in the next section.

NEED FOR INSTITUTE-INDUSTRY LINKAGE [5]

Institute-Industry linkage (IIL) can promote socio-techno-economic aspects essential for the national prosperity. Therefore, IIL is not only vital in technical and management education but also in general education, because the term "industry" is very broad and it encompasses engineering and non-engineering houses, like, agriculture, trading, service, banking, hospital and even institutes. However, this paper is confined only to technical and management education in India. These technical and management institues turn a simi-finished product put to use later on by industry. This needs a thorough analysis and design of the technical and mangement education so as to produce this semi-finished product, effectively, efficiently, and economically, with appropriate quality and quatity fitting it suitably into Indian work-life and work-culture. This can minimize training and retraining undertaking later on in industrial houses for requisite manpower planning and development, thus saving nation's valuable time, money and labour. In view of this objective in mind, the status of today's III and its tomorrow's requirementss (expectations are spelt out in the next section.

INSTITUTE - INDUSTRY LINKAGE : TODAY AND TOMORROW [1, 5, 9]

Table 1 summarizes the status of today's institue-industry linkage (IIL) and its expectations for meeting tomorrow's challenges.

Table 1: Institute-industry Linkage : Today and Tomorrow.

Sr No.	Component	Today's IIL	Tomorrow's IIL
1.	Curriculum development.	Industry personnel co-opted on various bodies; like, BOS, concerned with curriculum development.	More active & lively participation by industry personnel.

2.	Students' growth.	Scanty provision for vacational trg. and technician trg.	Industry provides 2 month vocational trg. per year for every student.
3.	Teachers' quality improvement.	Limited scope for industrial trg. Faculty exchange programme almost non-existant.	Teachers to be deputed at least for 2 months per yeear in a phased mannner with students' trg.
4.	Project & Seminars.	Limited scope for industry based projects & seminars.	Majority of students take up industry based projects & seminars under the joint guidance of institute & industry.
5.	Consultancy & testing.	Barring a few institutes, it is at its lowest ebb.	Shall cater local needs as a joint venture of institute and industry.
6.	R & D.	Non-exixtent.	Teachers-industry faculty exchange programme promoted. Networking of facilities.
7.	Management.	Limited participation in IIL.	A common platform for management, industry & Government shall be evolved.
8.	Training & Placement Officer.	Limited to activities as compus Interviews vacational trg, etc.	Trg Officer shall work as a cutting edge between management and industry. Fully involved in students' personality development.
9.	Guest faculty.	Almost non-existent.	A usual feature. Active participation in distance learning.
10.	Technological park/exhibition.	Presently at University level.	Promoted at institute level & local participation.

11.	Facilities development & exchange.	Industry rarely consulted for equipment purchase.	Development of facilities a joint effort of industry & institute. Networking of facilities among institutes and industries. Can save national resources.
12.	Examination.	At-times industry personnel involved but at a meagre scale.	At least 50% examinners from industries.
13.	Industrial Visits.	Frequency is too low. It is normally of general nature.	Specific areas be visited for indepth study. Visit after theortical coaching and preceded by a talk in industry.
14.	Library exchange programme.	Non-existent.	Industry-institute library networking.
15.	Faculty exchange programme.	Almost non-existent.	Teachers deputed for factory assignment for 3-6 months in a span of 2 years and industrial personnel to teaching assignment in institutes.
16.	Government & local bodies	Centralized control. No institute-industry participation in national policy making.	A common platform for govt., industry & institute for framing national policies.
17.	Industry.	Plays limited part in promoting IIL.	To be more competitive internationally, industry joins hands with institutes.
18.	Audio-visual aids	Recently being introduced	A prominet feature. Aids development as a joint venture of industry - institute.
19.	Awards.	No such awards for promoting IIL.	Shall be instituted for institute-industry personnel.

20.	Periodicals & News letters	Non-existing for III.	Bodies like ISTE, CEI, to edit periodicals dedicated to IIL.
21.	Sanwich courses.	A few courses exist.	Industry shall adopt institutes and run such courses.
22.	National service.	Non-existent.	Every student needs to decicate one year to the nation and it shall be a prerequisite for his career.

SCOPE FOR FUTURE WORK

Table 1 has presented over 20 broad areas which can promote IIL. These and several others need detailing and indepth research. Wide scope for future work in such areas exists.

CONCLUSION

This paper has poresented a model describing some major components of education system, like, teaching mode, institute environment, etc. It has been pointed out that the conceptual and physical environment can boost students' morale turning them into a quality semi-finished product to be put to use later on by industry. This can save national time, money, and human input enhancing national prosperity. Institute-industry linkage has been shown as one of the vital tools for such acheivements. Over twenty broad areas, such as, curriculum development, faculty exchange programme, networking of facilities, etc., have been spelt out with their today's status and tomorrow's expectations. Scope for the future work has also been highlighted.

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