

## Industry Linkage Activities at Tafila Applied University College: Towards a Framework for Industry Linkage

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**Abstract:** The purpose of the study was to examine the general situation and environment of Tafila Applied University College (TAUC) in relation to industry-education interaction and to discuss existing and possible future industry linkage strategies. This study presents observations from the college, as well as suggestions for action on industry linkage. It is not intended to be as a final summation of the issues, but rather as a starting point for further studies and constructive suggestions. This investigation aims to encouraged to refine and improve these conclusions and observations by challenging and/or expanding any and all aspects of the study.

**Key words:** Industry-education interaction, linkage strategies, BAU, TAUC, tight vs. loose linkages

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### INTRODUCTION

The need to build stronger connections between training systems and industry is commonly given as a high priority for Tafila Applied University College (TAUC) practitioners and policy makers. The theme of 'industry linkages' has been a central concern of TAUC domestic policy for several years. This study aims to put the business of industry linkage in a broader context, as a way of understanding how linkages are supposed to work and as a basis for a more strategic approach to practice in TAUC and may be other colleges under the umbrella of Al-Balqa' Applied University (BAU)

For the purposes of this study, TAUC is defined as public institution offering work-oriented education and training mainly at the post-compulsory level. In an imaginary or 'ideal' labour market, rational buyers and sellers (employers and workers) meet to exchange labour for wages. Quantities and prices fluctuate according to the laws of supply and demand and temporary shortages or surpluses are remedied by the market. The theory of human capital<sup>[1]</sup> explains how market forces can regulate not only the quantity, but also the quality of labour.

The term industry is used broadly to include all labour market sectors<sup>[2]</sup> i.e., not just manufacturing or natural resources. "Industry linkage" refers to any mechanism or strategy intended to promote interaction between the education system and the world of work<sup>[2,3]</sup>.

International experience has shown that education-industry linkages can provide numerous benefits for employers, students, workers and the economy and

society<sup>[4]</sup>. Industry linkages are especially important for effective "applied" or work-related education such as, align graduate skills with industry demand, improve educational planning and efficiency, improve graduate employment and labour market function, improve student learning and motivation and promote sharing of resources between education institutions and work places.

Like educational institutions themselves, education-industry linkage practices serve diverse and multiple purposes. Linkage strategies must be thoughtfully designed to address specific objectives and circumstances. Inappropriate linkage strategies can do more harm than good by underdetermining the morale of students and instructors, alienating employers and tarnishing the reputation of the institution<sup>[5-7]</sup>.

**Tight Vs. loose linkages:** Tight linkage strategies aim to ensure that graduates' skills meet very specific requirements of the labour market or individual employers<sup>[2]</sup>. For example, apprenticeship programs normally aim to produce workers for well-defined occupations that require specific skill sets. Similarly, a special-purpose-training course may be designed to produce skills for a particular industrial process or technology. In many professional fields, programs of advanced education prepare graduates to apply very specific skills that are required for specialized professional practice. Skill requirements may be specified by law and/or professional accreditation regulations. Tight linkage strategies are appropriate where industry indicates demand for highly specific skill sets. In designing mechanisms for tight linkage, the main concern is to

demonstrate that graduate's skills match industry specifications. The emphasis is on the design of curriculum and student evaluation processes. Common strategies include the use of program advisory committees (PACs), competency-based curriculum design and comprehensive student evaluation<sup>[9]</sup>.

Loose linkages strategies will be more appropriate where the educational program is not intended to satisfy specific skill demands, but rather to help graduates find and keep employment. Rapid growth of the services sector and rapid expansion of participation in post-secondary education have led to a situation where young people have difficulty gaining entry to the labour market, particularly in positions where they can fully utilize specialized skills.

In an increasingly 'flexible' youth labour market the priority should be to equip students to find employment and begin building progressive careers, mainly by drawing on a range of skills applicable to various employment situations<sup>[9]</sup>. Essential employability skills include solid literacy and numeracy, along with the social and communications skills that enable students to make network contacts. For most service-sector occupations in Jordan, other key skills are computer literacy and English (or other second language) ability.

Strategies for loose linkage will emphasize program design and instructional methodology. Programs for loose linkage will aim to produce solid foundation skills and transferable skills. Instructional processes will aim to build student confidence, creativity and flexibility and promote a realistic understanding of the labour market and the world of work. Linkage strategies can be built into the day-to-day instructional process by means of field trips, employer presentations, real-world research and problem-solving exercises, work place simulations, etc. Direct contact with employers and industry experts can help students develop confidence and personal contacts that can be crucially important to their employment success. Therefore, loose linkage strategies are appropriate in conditions where the concern is not to meet labour market demand for specific skills, but rather to meet student demand for access to jobs and opportunity, particularly in a situation of labour oversupply.

**A combined approach:** Effective linkage strategies within TAUC should involve a combination of loose and tight links as appropriate. Core programs should equip learners with the basic literacy, numeracy, interpersonal, computer and foreign language skills that are essential to career success in a flexible labour market. Specialized skills to meet specific industry demand can be developed through specialized streams in the upper levels of diploma and

degree programs and through short courses (credit and non-credit).

**Tafila Applied University College (TAUC):** TAUC is one of the main colleges under the umbrella of BAU, which is located in Tafila region of the southern part of Jordan. Tafila region is relatively depressed economically, with high unemployment<sup>[9]</sup>. The economic base is natural resource extraction and primary processing. Much of the employment in these sectors is relatively low skilled and low-paid.

The tertiary (services) sector of the local economy is not well developed. Since 1997 when it came under the umbrella of BAU, programming and facilities at the college have been greatly improved. The college has good facilities including student housing, food services, a mosque and a guesthouse. Labs and workshops have benefited from major equipment donations through Japanese foreign aid. The faculty is highly educated, with well over 50% of the teaching staff holding Ph.D. or Masters' degrees. Enrollment has grown dramatically, from 270 in 1995/96 to approximately 1,250 in 2002/03. Programming is oriented primarily to Engineering fields, with a minor focus on school teacher training. The Academic program was discontinued in 1994 due to high graduate unemployment. A surveying program was introduced in 1995 but discontinued after one cohort due to labour market saturation<sup>[9]</sup>.

**Labour market demand :** The Jordanian labour market in the natural resources sectors is characterized by chronic over-supply of skill labour. The Jordanian phosphate industry is characterized by low wages and poor working conditions, indicating that the low market demand for skills. The situation is worsening as demand remains static or declines while the expanding education system adds to the skills supply.

Low labour market demand is reflected in graduate employment outcomes. Employment rates given in the strategic plan (TAUC) 2002 are probably over-optimistic, as they are based on low responses and do not factor in the rising supply of graduates from various education providers. The graduates interviewed indicated that they are drastically under-employed, utilizing 15% or less of the skills acquired from their college education (Mining Engineering diploma and bridging programs). Graduates acknowledge that they are motivated to invest in education because formal credentials are a necessary condition for labour market opportunity of any kind (and not because skills lead to employment).

Privatization and foreign investment in the natural resources sector may bring new industrial practices and

a greater employer interest in specific skills. It is possible that within the next few years, industry restructuring may create new, demand-driven linkage opportunities for TAUC. On the other hand, industry reorganization may also lead to job shedding.

**Institutional priorities and directions-academic drift:**

Like the Jordanian higher education system in general, TAUC shows a tendency to ‘academic drift’ (i.e. away from applied and vocational training and toward the university model). The trend is not driven by labour market demand for high skills, but rather by student demand for competitive qualifications in a skill-surplus labour market. There is also local political pressure to convert the TAUC from a BAU satellite to an independent university, on the assumption that this would create a magnet for regional development. Faculty backgrounds also contribute to academic drift. Few faculty members have direct industry experience and most are oriented to academic achievement<sup>[5]</sup>.

The main reason for Tafila College’s rapid enrollment growth in recent years is probably its low entrance requirements 80% compared with university requirements of 90% or more. At first glance, this might be taken to indicate a commitment to “accessibility”, where lenient entrance standards and rigorous exit standards enable mid-level students to improve their skills. Assuming that applied skills were in demand, a low-entrance/high-exit policy could be a powerful basis for distinguishing this institution from its competitors. However in reality, Tafila faculty members tend to regard the low entrance requirements as a mark of inferiority, to be raised as soon as demand warrants. In competition for university-style prestige, the rural, applied college is condemned to playing ‘catch-up’.

In comparison with conventional university engineering programs, the TAUC clearly has an applied focus. However, the training remains fairly theoretical as students receive relatively little hands-on practice with real-world equipment and projects. Lab equipment is generally of ‘demonstration’ scale and workshop training is oriented to general familiarization rather than in-depth skill formation<sup>[5]</sup>.

**Existing industry linkage practices at TAUC:**

**Work place learning:** TAUC diploma and degree programs include mandatory work place experience components. This is good in principle and has potential for various benefits. However, the benefits of work place experience are limited by the capacity of industry. Placement activities tend to be “look but don’t touch”. Participating work places do not necessarily have the

capacity, the interest, or the complexity of work that would make them effective learning sites<sup>[5]</sup>.

Work place training is not a priority for most faculty or students. Industry representatives are seldom included in the evaluation of students’ work place-based training, despite College regulations. Evaluation of the work component is a simple Pass/Fail and “fail” is seldom if ever given.

**External speakers and instructors:** Presentations and lectures by industry practitioners and employers are rare. Students indicated that the guest lectures arranged by the Mining Engineering Faculty were very valuable, but said that this practice was not used in other courses.

**Industry Linkage Unit:** TAUC has developed a proposal to establish an Industry Linkage Unit (ILU). A committee has drafted a Strategic and Operational Plan for the ILU<sup>[6]</sup>. The proposal is an excellent start and the operational plan reflects a good understanding of the variety and potential benefits of industry linkages.

**Consulting services:** Linkages have been academically driven, with emphasis on consulting services. The unit has had to struggle to gain the attention and serious engagement of industry. In cases where industry has shown interest, opportunities have fallen through because of institutional obstacles. Some of these are: lack of faculty incentives for extra work in relation to industry projects; lack of faculty experience with industry; absence of a central contact point for industry and a central database of institutional capabilities and absence of BAU policy to promote and facilitate faculty outreach activities.

**Program development and review:** Program development is institution-driven. Initiation of new programs (e.g., Bachelor programs) is not based on assessments of industry demand. Industry is invited to comment on new curriculum proposals. Regular curriculum review (of less than 10% of content) is done without industry input.

Although the TAUC Council includes representatives from the community, there is no apparent direct involvement of community or industry representatives in curriculum and academic decision-making.

**Other linkages:** There are very few regular channels of communication between the TAUC and local industry. TAUC staff are not members of industry or business associations and industrialists seldom visit the College. A minority of individual faculty members maintain informal contacts with industry (normally based on their past experience in industry).

## **Recommendations**

**Objectives for linkage:** Clearly the starting point for industry linkage planning at TAUC must be an acknowledgment of the skills surplus in the regional labour market. Generally, the situation at TAUC does not call for tight linkages to satisfy industry demand for specific skills. None the less, industry-college interactions of a variety of kinds can still provide valuable benefits for students and the institution. TAUC linkage strategy should aim to improve student learning and motivation; raise awareness of industry working conditions, values and expectations; help students build network contacts and references that can improve their employment prospects; improve faculty awareness of industry; help build an industry-focused institutional culture; raise awareness of TAUC within local industry and the community, as a uniquely industry-focused institution; Build TAUC's capacity to meet future industry demand for skills and/or demand from industry outside the local region.

## **Specific recommendations**

### **Linkages for improved student learning and networking:**

Build industry participation into instruction wherever possible and aim to include significant industry interaction in the instructional process in every program area. This should eventually become an institutional requirement, monitored by department chairs and the Dean.

Provide upgrading for faculty members in instructional techniques for applied education. Workshops in applied instructional design and instructional skills could motivate and equip instructors to break out of the lecture mode and encourage them to experiment with more interactive and practical learning experiences.

**Develop and refine the industry linkage unit:** The proposed ILU<sup>[6]</sup> is an excellent initiative. It should be further developed as a central catalyst to promote, administer and facilitate a wide range of industry linkage practices within TAUC. Its mandate should be expanded to encompass applied research projects, service and production activities and applied teaching and learning.

The ILU's first priority should be to develop industry linkages that promote student learning and networking. Revenue generation and faculty research opportunities are also possible but should be secondary objectives.

The ILU needs authority to introduce reform. While working mainly through awareness raising and encouragement, it also needs direct input to TAUC administrative policies that affect industry linkages. The ILU should function as an open forum to support best practices. But it should also be linked directly to the Dean and be able to recommend enforceable policy changes.

Guidelines should be developed to govern service and production projects. For instance, projects should be directly relevant to course learning objectives be at an appropriate skill level (i.e., present learning opportunities, but be manageable mainly by students rather than instructors or lab technicians; make use of student skills and knowledge, not just college equipment; avoid exposing the institution to unmet expenses or commercial or legal liability; provide services of value to local employers/industry; and avoid creating real or perceived competition with existing businesses.

## **CONCLUSION**

**Education system and labour market:** The dominant feature of the labour market in TAUC region is lack of demand for specific skills in the range produced by the college system. On the other hand, there is strong social demand for academic qualifications as a precondition of social security/mobility and status. Consequences of the above are 'academic drift' (a trend toward ever higher qualifications) and competition among education providers to meet student demand for qualifications. Despite the general condition of skills oversupply, existing industry linkage practices at the college level are generally suited to a skills-shortage situation.

**BAU college system:** There is excellent capacity of various kinds within the individual BAU colleges. At every pilot college there are committed and creative staff with the ability and motivation to move ahead with best practices. BAU lacks a clear sense of educational mission at the ground level. Divergent visions co-exist side by side. (exclusivity and academic status; inclusivity and student/community service; responsiveness to industry and responsiveness to social demand for qualifications).

Existing industry linkage mechanisms tend to be employed blindly without a sense of purpose. Reasons seem to be a mixture of tradition, centralized policy, lack of coherent vision, lack of local authority for change and lack of awareness of alternatives.

Outlying colleges call simultaneously for more autonomy and more response from the BAU administration. Given the diversity of visions, central control is essential. However, there must be both authority and resources for local innovation.

In most program areas and for most TAUC students, linkages should be loose and should be designed to promote student learning and networking. In cases of demand for specific skills, develop tight linkages that emphasize skills, not qualifications. Where possible, combine loose and tight linkages e.g., 2 years diploma programs with general first year and specialized options for second year. Short, non-credit or credit courses for special occupational skills part-time and alternate-format

courses. Where long-term demand is likely, form tight linkages by working closely with industry. When developing permanent programs, seek accreditation from (international) industry bodies. Focus on skills and industry approval, not academic rank.

**Distinguish BAU colleges by their excellence in skills development and learning:** Use industry linkages creatively to enhance learning and student motivation. Abandon rigid linkage mechanisms where results are poor (e.g., ‘look but don’t touch’ work placements). Instead, build employment-related activities into day-to-day instruction and grade students on their performance.

**Build system-wide capacity:** In order to build a system-wide capacity, the followings activities should be taken into consideration:

1. Support best practices in applied learning
2. Provide faculty development for applied learning skills (instructional design, teaching skills)
3. Build capacity for open learning
4. Build capacity to provide industry services and applied research and
5. Allocate resources to support student learning.

**Consider establishing a central unit to promote a full range of industry linkage practices:** The unit would:

1. Promote a culture of applied and industry-oriented education throughout the college network.
2. Promote awareness of industry linkage strategies and their benefits.
3. Cultivate and disseminate best practices.

Advise on administrative reform to promote industry interaction (e.g., establish guidelines for faculty incentives and compensation for industry linkage work; guidelines for faculty hiring to include industry experience; advise on guidelines for work place-based training and student evaluation; guidelines for faculty “return to industry” leave; guidelines for adjunct instructors from industry and guidelines for continuing education (CE) programs targeted to industry upgrading.

#### **Facilitate communication and awareness**

1. Serve as a high-profile point of contact between the BAU colleges and industry.
2. Maintain a database of faculty expertise and program content across the system to facilitate matching with industry requests.
3. Maintain a list of industry-based experts, speakers and resources available to colleges.

4. Coordinate the development of linkage units at member colleges and harmonize their practices and databases.

The observations and recommendations made in this report reflect the view of the authors, based on direct experience with the college. The observations are offered in a constructive spirit and are provisional, subject to further research and discussion. It is hoped that these comments will stimulate some thought and debate on improved industry-linkage strategies and that where appropriate they will lead to specific action.

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