Quality Approaches in Higher Education

Transforming learners from participants to coproducers to meet the challenges of a dynamic knowledge base.

Coproduction of Knowledge: A Literature Review and Synthesis for a University Paradigm

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Abstract

The mission of education is manifold. The responsibility of the service providers of education does not end with making education available to students but, it extends to ensure that education provided is optimally co-created by students along with other stakeholders. Increased demand for coproduction in education from student-beneficiaries supported by creative learning inputs can trigger delivery of dynamic inputs from the lecturers toward coproduction. This article presents and proposes a coproduction framework to transform the learners from mere participants to co-producers. The coproduction framework is developed by applying marketing concepts to existing theories and practices of learning. The proposed model should enhance the development and sustainability of life skills out of education and expedite the rate of human capital formation in society. This article further recommends effective application of social marketing to successfully operationalize the model.

Keywords

Pedagogy, Absorption, Participation, Coproduction, Operant Resources, Operand Resources, Cognitive and Emotional Components, Intrinsic Price, Beneficiary Producer and Regular Producer, Demand and Supply, Social Marketing

Introduction

One of the greatest missions of modern education at all levels of the educational pyramid, public or private, is to build a "knowledge economy." Provision of education is an initial step toward a comprehensive process of building a knowledge economy. Developing countries have a fairly reasonable number of higher education institutions either in the public or private sector. Nevertheless, there are studies across the globe that reflect on the mismatch between the expectations of employers and the competencies of graduates. Turnbull (2009) cited a study wherein employers in the United Kingdom consider their graduates insufficiently prepared to enter into professional fields on grounds of quality. The study criticizes the poor role being played by the educational institutions in developing employability skills among the graduates. Students attain employability skills through involvement in both academic and extracurricular activities. On the other hand, it is noteworthy to understand that there are theories of learning and concepts in education which generally guide or at least dominantly lead the academic practices of students and lecturers.

Astin (1993) did a large-scale correlational study of what matters in college involving 27,064 students at 309 baccalaureate-granting institutions. The research found that a cooperative classroom rather than a competitive classroom promotes both student-to-student interactions and student-to-faculty interactions in the teaching and learning process. These two forms of bi-dimensional interactions carry high weights and major effects on the academic development, the development of personal competency, and satisfaction of college students. The study indicated that compatibility of students' learning approaches with the instructional style of the lecturer is much more important than the formal curriculum.

Sadlo and Richardson (2003) discussed three major learning approaches: surface learning, deep learning, and strategic learning approaches. They observed that a change in the conception of learning by students is required to achieve superior quality education. They

further cited a study which contends that educational interventions alone are insufficient to change this conception of students. Conversely, Redish and Smith (2008) observed that most of the approaches to curriculum development, design of instruction, and assessment do not keep pace with the conception regarding the cognition of the learners, learning styles, and the requirements of domain subject. They have been designed on the basis of implicit and highly limited conceptions of learning and outdated theories and models. Observations of both Sadlo and Richardson (2003) as well as Redish and Smith (2008) indicate the need for transformation in the conception of learning by students.

Drawing from the observations of Sadlo and Richardson (2003) regarding the need for extra-educational interventions, it is desirable to look beyond the theories of education to address issues pertaining to employers' expectations regarding graduates' attributes and competencies. Today's workplace, either commercial or philanthropic in nature, is guided by the principles and concepts of management in an incremental proportion. The process of managing professional fields, whether for profit or for services, is dominantly guided by Total Quality Management (TQM) concepts, which focus on enhancing the value available to the clients and customers. Additionally, the logic of viewing the utility of outputs from the standpoint of end users rather than providers has increasingly been recognized as promising. Employers as end-users of graduates can provide constructive feedback to universities, which will be instrumental in improving educational processes and practices. Winn and Green (1998) categorized students and employers as the primary customers of universities. They assert that employers' expectations are met well through the measures to develop the employability skills and competencies of students in the university, which, in turn, will satisfy the rest of the stakeholders.

Students' employability skills can be enhanced by applying the modern concept of value creation, which is popularly applied by business organizations in the domain of service marketing. According to the conventional assumption, value was created on a value chain by the producers and passed on to the beneficiaries. In a value chain, value is generally audited on the results. On the other hand, it has been shown recently that value can be created by all the actors (known as value cocreation) of a value network involving producers as well as beneficiaries. In a value network, value can be measured, monitored, and added during the process and sub-processes by all actors (Ramirez, 1999). Such processes of value creation are not simply a successive linear transfer of value in a chain from a producer to a beneficiary. Rather it is an interactive and synchronized value network webbed into multidimensional directions involving an increased number of creators at different stages starting from production until the utilization of value. Such a value cocreation is the spirit and foundation of coproduction in teaching and learning as discussed in this article.

Drawing from the previously discussed marketing concept of value creation, it can be deduced that quality of education and that of the graduates is better enhanced through collective efforts of students, professors, and potential employers.

Hence, this article contends that the concept of coproduction can be a declared agenda of two-dimensional student interactions promulgated by Austin (1970). Such an agenda, if adopted in the mission of a university, will help the process of coproduction to dominate in the student engagement space. Drawing from W. Edwards Deming's 14 points of TQM, Winn and Green (1998) also emphasized the importance of adopting a new philosophy built into the teaching and learning process in the university classroom different from the philosophies habituated from schools.

Many authors (e.g., Shaeffer, 1994; Swanson & Holton, 2001; Vargo & Lusch, 2004; Bovaird, 2007) have advocated the significance of coproduction with enhanced focus on contributions of beneficiaries. Service production in education should have active involvement of students. According to Ostrom (1996), capability-building services are always coproduced by stakeholders. As education is a capability-building experience, students should be actively involved in the coproduction process to utilize optimally the infrastructure and inputs provided by the service providers. Bovaird (2007) also asserted that students should play a central role in the coproduction of knowledge. They shall perform the learning tasks guided by the "enabling" role of lecturers in a relationship equivalent to that of clients and service professionals.

There are some elements of value creation jointly contributed by different stakeholders of higher education, which can be acknowledged as coproduction existing in higher education institutions. Hénard (2008) found elements of coproduction involving internal as well as external stakeholders, project-style learning, and co-governance of programs existing in higher education institutions (HEIs) as discovered in a project study involving 29 HEIs of the world. Since the 2007-08 academic year, there has been a new coproducing group of professors, students, and industry experts in the Arcada University of Applied Sciences in Finland. The university plans and practices a new type of self-assessment procedure in selected departments. Students and other stakeholders also bring new ideas from different angles, other than the teachers, which enrich the learning strategy of the university. There is collaboration among students and staff to generate all kinds of actions for improvement in the teaching-learning process at the Copenhagen Business School in Denmark and at Alverno College in the United States, which also exemplifies a coproduction process. The major objective of an evaluation tool designed (Higher Education Self-Assessment of Competences)

for academic courses at the Free University of Berlin, Germany, is acquisition of competencies by students rather than mere acquisition of knowledge. Conversely, this objective is similar to the objectives of the coproduction framework being proposed in this article. The Business Partner Chairs at the Higher School of Economics of State University in Russia form project educational laboratories comprised of researchers, junior students, and professors. Such labs are connected with leading companies, analytical centers, and governmental bodies. They modify curricula and participate in applied research (Hénard, 2008).

Integrating scholarship from the best practices and concepts of co-disciplines and cross-disciplines provides greater grounding for improving practices in a particular field of study (Boyer, 1991). Conversely, the methodology proposed in this article is a critical and creative evaluation of marketing management concepts used to draw insights from the coproduction practices of service marketing and to integrate them with current practices in education. Consequentially, it visualizes new roles for student-beneficiaries by promoting new patterns of relationships among dominant stakeholders of higher education.

Background: Social Interdependence and Student Attributes

A culture of cooperative interdependence, a competitive interdependence, or absence of interdependence may guide the interactions of students depending upon the culture of the society as whole. Cooperative interdependence among students delivers higher results in the realm of student development (Johnson, Johnson, and Smith, 2007). Therefore, the students patterned through cooperative interdependence practices will provide strong grounding for encouragement of coproduction in learning.

Educational psychologists, curriculum developers, and researchers have been developing learning theories, which explain the process of learning established concepts, theories, and practices of various domains (e.g. Donovan, Bransford, & Pellegrino, 1999; Dunn & Griggs, 2000; Carnell, Lodge, Wagner, Watkins, & Whalley, 2000). Further, there have been wide discussions in the literature to improve the quality in teaching and learning (Padró, 2011). However, these literature deliberate on frameworks focusing on instructional style of lecturers. In fact, fairly reasonable coverage should be given to the formulation of knowledge and development of skills by students themselves, taking into consideration the previously mentioned nature and attributes of students.

Different theories and models of learning present learning approaches grounded on pure absorption (memorization) orientation as well as critical thinking orientation. That is, learners follow different approaches of learning, which have elements of absorption and critical thinking in varying proportions.

As noted earlier, there are few authors who observed the importance of coproduction in teaching and learning. A framework (Figure 1) is formulated with the help of existing theories and practices in education in order to make critical reflections on overemphasis of the presentation mode of teaching and memorization mode of learning.

Pedagogical Gift Framework

The framework in Figure 1, a pedagogical gift framework, is the base for the analytical purpose in this article. This framework was designed by the authors of this article after incorporating the ideas presented in the studies of Browne and Keeley (1981), Askew and Carnell (1998), and Horne and Shirley (2009). In this framework, educating students is more of a knowledge-transferring process than a knowledge-creation process where information and content flow from the lecturer to the student. Hence, the lecturer's presentation skills will have a bearing on the quality of the acquisition process.

Reflections on Pedagogical Framework

While assuming the pedagogical gift approach, lecturers are considered as authority on the content. Students consider lecturers to be dominantly responsible for the unilateral transfer of knowledge. They introduce skills to the students. Hence, the relationship between a lecturer and a student is like a transferor and a transferee. Lecturers either collect the content or create knowledge. Students, on the other hand, act as receivers of knowledge. One advantage of this approach is that the students can store the knowledge and reuse it in a stable environment when needed. Contrary to that, the opportunities calling for use of knowledge
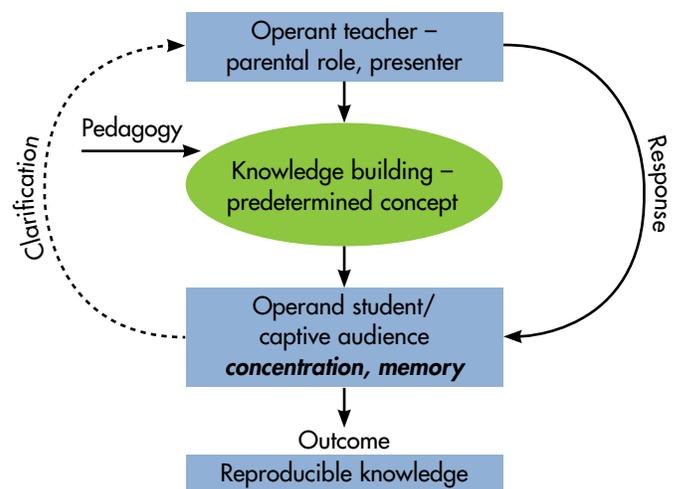

Figure 1: A Pedagogical Gift Framework
Source: (Browne & Keeley, 1981; Askew & Carnell, 1998; Horne & Shirley, 2009)

is fast changing (Carnell et al., 2000; Bryce & Withers, 2003). Therefore, the outcome of the process of education should enable the student to face the challenges of a dynamic knowledge base successfully. Smith, Sheppard, Johnson, and Johnson (2005) discussed a similar model for use in engineering education, the "Pour it In" model developed by Lila Smith. The pedagogical framework is similar to the Pour it In model in terms of direction of flow of content and information. Smith et al. (2005) observed that this model is predicated on the rote notes by the lecturer and rote memorization by the students.

Further, it is a linear approach of knowledge transfer which encourages individual learning efforts rather than cooperative learning effort because the faculty-to-student interactions lead the transfer of knowledge. Cooperative student-to-student interactions are not an essential element of this transfer. It is suitable for transferring absolute knowledge rather than facilitating learning of know-how through trial and error by students. Hence, it forestalls students from gaining and developing skills to do a particular task independently in future.

Conversely, the following paragraphs highlight several learning models which emphasise the participation of students in the learning and teaching process with regard to the existing knowledge.

Pascarella and Terenzini (2005) proposed the "College Impact Model" to improve college outcome by influencing inter-student and environmental variables of student engagement. They observed that institutions should focus on shaping their academic, interpersonal, and extracurricular offerings to encourage student engagement. According to these researchers, instructional and programmatic interventions can enhance knowledge acquisition as well as active engagement toward cognitive and psychosocial development of students. However, this model does not explicitly cover cocreation of value by students as the purpose of the academic responsibility.

Weaver and Qi (2005) came up with a "Path Model" which estimates the impact of attributes and perceptions of students on class participation and learning. They reported low class participation of college students in the learning process. They concluded that students' characteristics, mostly internal ones, influence their perception, which, in turn, affects their participation in the learning process. They noted that students' perceived ability deficit, lack of confidence, and lack of preparation of the introductory courses hamper students' willingness to participate in the class.

Smith et al. (2005) quote the work of Christensen to assert that engaging students in learning is principally the responsibility of the lecturer. It is interesting to note that the study treats a lecturer as a designer and facilitator of learning experiences and opportunities rather than an imparter of knowledge. Further,

this approach refuses the spirit of the presentation mode in teaching and encourages deep understanding by students in learning.

As elaborated earlier, students are found to engage in either cooperative, competitive, or individual efforts to attain learning goals. The "Keep it Flowing Model" drawn by Lila Smith as discussed in Smith et al. (2005) is a teaching-learning process grounded on cooperation where students among themselves as well as with faculties work together to accomplish shared learning goals. Cooperative learning encourages individual students to seek outcomes which are beneficial to themselves and to all other students. Cooperative learning groups are founded on principles of positive interdependence, individual responsibility, and collective accountability for the work.

It is a general truth that learning goals could be as varied as understanding the concepts deeply, learning to do a task, creating something new to the students, or creating something new to the world. The similarity between cooperative learning and coproduction lies with the presence of a partnership among actors in learning. Alternatively, cooperative learning is more about the positive environment of student engagement; whereas the purpose, goals, and process of student engagement are clearly defined in coproduction. That is, the purpose is creation and the process is cocreation along with the lecturer and peers in a coproduction framework. Integrating cooperative learning into creative learning will improve the match between what employers require and what students graduate with from the universities. Hence, a coproduction framework explicitly re-conceptualizing a comprehensive cocreation is described in this article.

Kuh (2013) observed that the student behaviors, institutional actions, and students' previous knowledge influence students' learning and development. He stressed the need for understanding the meaning and value of engagement by faculty, administrators, and students. Understanding of students from the perspective of a "service-centered dominant logic of marketing" can make beneficiaries actively involved in the knowledge-gaining and creating process. A service-centered dominant logic of marketing focuses on the transformation of the student into an operant resource from an operand resource (Vargo & Lusch, 2004). This view considers students as creators of knowledge and skills rather than mere active receivers and users of knowledge interacting with the sources of such knowledge. The authors of this article suggest ascribing the conception of operant resources to beneficiary-students and enabling them to understand the meaning and value of engagement in the logic of marketing, which will transform student behavior.

Operant resources assume that both lecturers and students are part of the knowledge-building and capability-enhancing process, which is different from the conception of operand resources.

On the other hand, operand resources assume that knowledge is transferred to them by lecturers. If students perceive themselves as operand resources or lecturers perceive them as operand resources, they cannot become better partners in the knowledge-building process. Similarly, participation in the transfer of existing knowledge or that formulated by the lecturers help students critically evaluate and arrive at their own conclusions. However, coproduced knowledge provides peers and lecturers an opportunity to critically evaluate, comment, and conclude on the contributions of co-students. For this to happen, the self-concept of a student should undergo a paradigm shift to transform a student-participant into a co-producer. This outlook is in line with the observation of Joshi (2004), who noted that coproduction requires major changes in the roles and responsibilities of stakeholders. Vargo and Lusch (2004) also emphasized the importance of enhancing the role of beneficiaries in the service coproduction. According to them, beneficiaries should act proactively to enhance the quality of output as they transform themselves to be operant resources.

If a comprehensive coproduction philosophy for knowledge building is introduced in a university, it will help maximize the overall efficiency of the university. This could be achieved through appropriate, judicious, and sustainable utilization of inputs by students and lecturers; some of them are critical inputs and are mutually exclusive contributions. Students' efforts, mental ability, cognitive skills, and emotional progression cannot be substituted by other contributors. It signals the importance of valuing student contribution in the coproduction process.

Course Schedule and Assignments

TQM considers education as a product. To improve the product or service, it is desirable that management pay close attention to the processes of product development by measuring, monitoring, and regulating the sub-processes, so that management gets pertinent indicators for corrective action at intermediary stages. Nominal

quality audits give a postmortem of the causes of product failures, which are insignificant in TQM. Hence, the successful completion of the educational product requires the students be involved as partners and co-managers in the learning process (Tribus, 1994).

Many authors (e.g., Browne & Keeley, 1981; Donovan et al., 1999; Bryce & Withers, 2003; Collis & Moonen, 2006; Turnbull, 2009) pointed out the need for transition of learning from rote learning to critical thinking. Moreover, few authors (e.g., Parks et al., 1981; Vargo & Lusch, 2004) have emphasized the application of marketing concepts of operant resources, operand resources, coproduction, beneficiary producer, and regular producer in relation to education and its stakeholders. As a result, the relationship between lecturers and students no longer will be similar to the producers and consumers of knowledge. Rather, lecturers are considered as the regular producers of knowledge as they produce it to exchange with students whereas students are considered beneficiary producers as they produce to experience the process of enhancing their skills, competencies, and knowledge out of coproduction.

The framework shown in Figure 2 assumes the importance of coproduction, wherein involvement of both the lecturers and students in the teaching and learning process is much more creative than critical evaluation and understanding of existing knowledge. The framework presents two processes: P1 and P2.

P1 assumes that the lecturer is using pedagogical tools to impart knowledge in an environment of information and communication technology. The reusable knowledge gained through the primary process and refined through cognition at the students' end will be the base knowledge for the students to contribute in the knowledge creation process of P2. In P1, students ask questions in the class, get clarifications during class discussions, seek feedback from faculty on their academic performance, etc. P1 denotes linear and successive steps in a chain of value creation.

P2 shifts the focus of learning and teaching from instructional mode to cocreation mode. The student moves slowly from
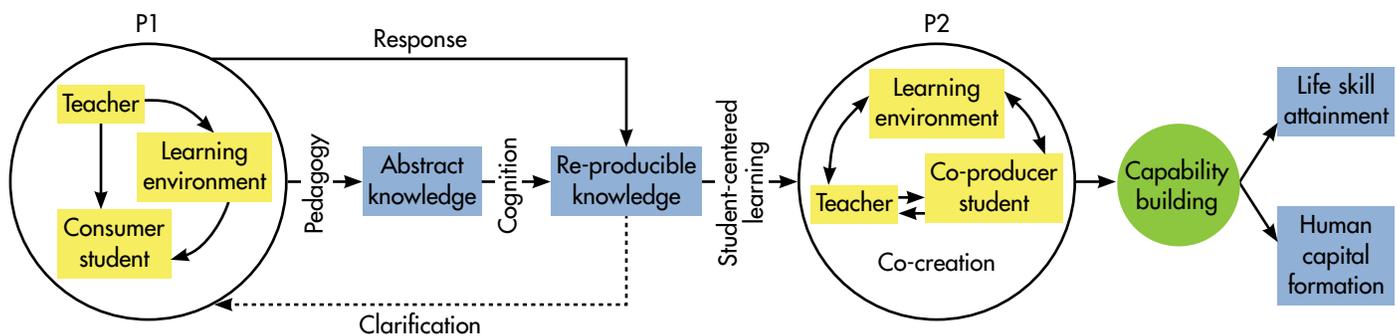
Figure 2: Coproduction Model in Education
Source: (Browne and Keeley 1981, Ostrom 1996, Vargo and Lusch 2004, Becker 2009, Horne and Shirley 2009)

a participant of the knowledge transfer chain to a producer in the coproduction network. The student should ideally be a creative thinker and contributor. The students undertake intellectual experiments with the knowledge in interaction with their peers and lecturers. They engage in preparation and presentation of content, create models under the guidance of lecturers, undertake projects integrating ideas or information from various sources, perform self- and peer evaluations of their creativity, handle community-based projects, and tutor or co-teach other students. Here value creation is more synchronized than sequential and multidimensional calling for the enriched role of students in the value creation network.

These experiments produce knowledge and capabilities, which, in turn, polish life-skill achievement for a student-coproducer meeting the requirements of the potential employers of fast-changing, technology-driven professional fields. The framework entails a transition from transmission of knowledge and participation in the learning process to creation of new knowledge and development of competency to quickly learn professional practices. However, if coproduction is not mandated in the mission of a university, coproduction behavior will be limited to mere discretionary behavior by students. Consequentially, such discretionary behaviors by students will deliver only casual and chance result on coproduction.

Demand, Contribution, and Delivery in an Exchange Process

There is a "relational exchange" of intangibles viewed from the perspectives of students and lecturers in the bi-dimensional interaction discussed earlier in this article. In this interaction, specific to a higher educational setting, if students proactively sacrifice intrinsic prices, their inputs get equitably complemented by the inputs of lecturers in the form of expert guidance and knowledge. Drawing from the economic concept of supply and demand, output is at its optimum level when there is matching demand from beneficiaries for a given supply (delivery) level of inputs from lecturers. Astin's (1970) Input-Environment-Output (I-E-O) framework describes interaction of inputs and environment on college effects. However, Austin's I-E-O framework does not split inputs in line with a supply and demand equation. The proposed coproduction framework in this article presumes a supply and demand equation. Inputs from the students (beneficiary producers) arose from their demand and inputs in the form of knowledge delivered by the lecturers (regular producers) act in complementary roles of forces of supply and demand respectively.

Delivery (Supply) of Dynamic Inputs From Lecturers

Systematically defined teaching roles can provide a durable foundation to determine inputs from lecturers. These roles define the inputs supplied (delivered) by lecturers into the coproduction process. Boyer (1991) elaborated four basic roles of a lecturer—which cover functions in the domain of scholarship of discovery, scholarship of integration, scholarship of application, and scholarship of teaching. Boyer's work looked upon the role of lecturers on their creativity. Conversely, creativity is a very crucial element in coproduction. The importance of the above-discussed roles may vary depending upon the stages of learning and development of the students. An elaborate version of the roles promulgated by Boyer (1991) is found in the "Meta Professional Framework" propounded by Arreola, Theall, and Aleamoni (2003). The above framework is built on the dimensions of content expertise (base profession skills and knowledge), instructional design skills, instructional delivery skills, and instructional assessment skills. It postulated multiple roles for the lecturer in the areas of teaching, research, and service, which call for skills and expertise beyond the content-specific domain. This framework can be used to benchmark the inputs of lecturers from the supply side of the equation.

Contribution of Inputs From Beneficiary-Students

Inputs from beneficiary-producers (students) into the process and their involvement significantly shape the quality of coproduction of knowledge and the competency gained thereof by the students. Intrinsic prices or non-monetary sacrifices are dominant among these inputs. Intrinsic price is the extent of involvement, sacrifice, or commitment desirable from the students to convert normal learning into effective coproduction. Conversely, students' choices to put forth and persist in their extra effort to learn reflect the intrinsic price. Serrat (2010) suggested four major categories of intrinsic prices: time, effort (physical and mental exercises), lifestyle, and psyche. These resources or prices are given up by students as payment (beyond money) in exchange for gaining education: self-esteem, pride, love, power, prestige, identity, self-assertion, privacy, control, freedom from fear or risk, attention in the class, etc. are dedicated generally by students in the bi-dimensional interaction of educational process.

Demand for Coproduction From Students

The demand of students can be measured and improved by specifying its determinants. Deverill (2001) has provided the concept and definition of effective demand for public service. It is one of the definitions of demand with non-economic components in its makeup.

> "Demand can be defined as an expression of desire for a particular service, measured by the contributions people are willing and able to make to receive and sustain it. In other words, it is what people want, constrained by the resources they control" (p. v).
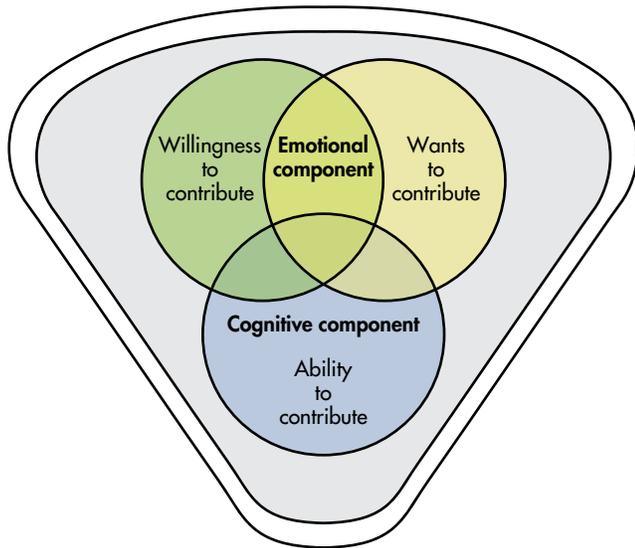
Figure 3: Effective Demand for Coproduction
Source: (Kotler,1980; Deverill, 2001; Serrat, 2010)

Kotler and Nancy (2009) explained demand in terms of readiness, willingness, and ability of a target audience to reach desired behavior. This definition also reflects emotional as well as cognitive components of effective demand. The effective demand can be analyzed with the help of a modified version of the above definition customized for coproduction in education. Figure 3 follows the definition modified by the authors of this article.

> "Effective demand for coproduction from students for education can be defined as an expression of desire by students for gaining and creating knowledge and capability, backed by their willingness and ability to contribute towards the process of coproduction so as to receive, create, and sustain quality education."

The law of demand in economics assumes interrelationships of price and non-price factors on demand. Elasticity of demand assumes that demand can be changed with deliberate changes in other determinants by the management. Conversely, drawing an anomaly from this theory of economics, if management uses social marketing tools to increase demand for coproduction of quality education, the students will prepare themselves to sacrifice high (quality) intrinsic prices. If the risk of experimenting coproduction is high, few students will be willing to spare intrinsic prices in coproduction. Hence, if a student with the ability to do an innovative technique of learning fails in an experiment, the effort should be applauded. Even failing attempts bring in something of value; the students must not feel deprived of anything intrinsically worthy.

Kotler and Nancy (2009) asserted that behavior change can be facilitated by applying effective tools of social marketing. Social marketing can condition strong positive emotions in students, which will act as a catalyst to enhance students' demand. Students will respond more from the "emotional core" of the brain— the amygdala—than from the rational part of the

brain—the frontal cortex. In other words, emotional components are more significant than cognitive components in building up effective demand for coproduction. For every increase in demand due to social marketing, there is a corresponding increase in the sacrifice of intrinsic prices by the students.

Drawing insights from what Kuh (2013) referred to as institutional actions in students' learning and development, management's efforts to stimulate effective demand from students will boost the contribution of intrinsic prices from students (beneficiary inputs) in the coproduction process thereby making the delivery of quality educational services (regular inputs) by the lecturers dynamic. Such a demand should drive the students to offer nonconventional inputs using their creativity and innovation. They might bring in elements of cooperative learning such as teamwork, learning circles, modified positive perceptions, peer appraisal, self-assessment, mock teaching, formative lecturer appraisal, quicker cognition, ambitions, and peer approval to the teaching and learning process. Goodwin (2012) noted the successful impact of social marketing in India in creating enough demand for the concept of family planning. Social marketing could transform the value and behavior of couples in a positive way. Conversely, social marketing tools can enhance the demand for the concept of coproduction in education among students and increase their contributions.

Proposed Process Management Interventions

This article proposes a comprehensive philosophy of coproduction of learning built into the mission of universities of the new knowledge economy in line with the 14 points of TQM propounded by Deming. Padró (2011) emphasized the significance of managerial excellence to pursue dynamic missions of universities in the wake of an emerging knowledge economy. Effective process management interventions can secure and sustain the smooth transformation of the teaching and learning orientation from high-emphasis on absorption and instructional style transversing through participation (with critical thinking) toward coproduction.

In a coproductive value creation network of teaching and learning, student productivity is much more important than the effectiveness of lecturers. Incremental progress in the productivity of students can be measured and monitored to ensure enhanced contributions from students. While considering students and lecturers in a TQM perspective, students are external customers and lecturers are the internal customers. The task of managing students is much more complex and challenging than managing lecturers. Most of the variables lying with student cohorts and the dimensions of such variables are not easily measurable and sometimes lay in grey areas of the management. Ramirez's (1999) statement that managing ignorant variables is much more complex than managing informed variables is applicable with reference to

students and lecturers as well. Therefore, policy makers should design and administer appropriate process management interventions to transform conventional classroom behavior of students into successful coproducing behavior. Andreasen (1994) provided logical elements of social marketing approaches to influence and transform customer behavior voluntarily. Serrat (2010) reported success made in transforming behavior through social marketing citing two case studies of education and awareness campaigns. Drawing from their work, management may undertake the initiative to get the discretionary behavior of students to evolve into proffered voluntary behavior conducive for coproduction. Based on the recommendations of Andreasen (1994) and Serrat (2010), management can follow these initiatives to transform students' behavior through social marketing:

- Develop scientific tools to measure effective demand for coproduction existing among students with the help of appropriate research tools.

- Identify the gaps in actual demand and the behavior desirable for coproduction.

- Identify the level, pattern, and mode of interventions required.

- Decide on the levels of interventions at the national level or at the institutional level.

- Identify intra-learner (cognitive and emotional) determinants of demand.

- Design exclusive programs to enhance their emotional quotient (EQ) and intelligence quotient (IQ) by segmenting beneficiaries on the basis of their attributes: want, willingness, and ability.

- Appoint a program manager at the college/university level to organize (social marketing) programs to educate the students on the value of their contribution in coproduction and bring in desired changes in their behavior.

- Include a series of campaigns to reinforce the transformed behavior and reduce dissonance.

Conclusion

There is a wide gap in the behavioral approach to learning being undertaken by the students and the learning approach desirable to enhance the employability skills of graduates. It is necessary to enhance the proportion of coproduction orientation as well as its practices among students to meet the dynamic needs of the job market. Such a transition requires fundamental changes in the roles, responsibilities, and inputs of all stakeholders, especially the student-beneficiaries.

Measuring the effective demand for coproduction from students can identify the deficiencies in the desired inputs, involvements, and roles of students. Management should take the initiative to measure effective demand from students. Effective demand from students equated by effective supply from the lecturers will make the process of coproduction organically outstanding. Efforts should be made to stimulate and sustain high level of demand and to ensure predisposition of students to contribute to the process of coproduction. Such a demand is cognitive and emotional in nature rather than economic. Hence, it calls for applying process management tools and taking into consideration students' motivational and capability vacuums.

Further, sound management and marketing practices in the corporate world are founded on the basis of theories gained earlier from business schools and universities. Reciprocally, universities and business schools can draw from the service-centered dominant logic of marketing and its allied domains of coproduction and social marketing to polish their best practices in teaching and learning. Universities can sustain leadership and transform culture of student engagement into coproduction, if such integrations target faster human development and maintenance of high quality human capital stock for ready supply to corporate needs.

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