

Leveraging Market Competiveness and Higher Education Challenges Through CL (Cooperative Learning)

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Educational systems worldwide face a number of fundamental challenges relative to the preparedness of graduates for employability and success in the 21st century. Colleges and universities are now increasingly called upon to equip their graduates with a new set of skills and dispositions that are markedly different from those that have characterized formal education. Furthermore, the changing characteristics of the new generation of college-goers, coupled with closing/reversing the gender gap in higher education, provide a further catalyst for reforming higher education. The purpose of this paper is to discuss the implications of economic competitiveness in knowledge-based societies and the changing characteristics of students to the reform efforts in higher education. The paper suggests infusing a range of 21st century literacy and problem-solving skills via CL (cooperative learning) as leverage points in fostering reform.

Keywords: knowledge-based economy, higher education, CL (cooperative learning)

The Rise of Service Economy and Implications for Educational Reform

The last three decades of the 20th century have witnessed a remarkable shift from the industrial economy based on manufacturing goods and products to a service economy driven by information, knowledge and innovation (Partnership for 21st Century Skills, 2008). The rise of the service economy at the expense of other forms of economy seems to have continued to expand in many parts of the world, particularly in the developed countries. For instance, Stewart (1997) reported that, about 20 years ago in 1991, spending in the United States on information technology (\$112 billions) surpassed spending on production technology. Similarly, Karmakar, and Apte (2007) reported that information services in the United States grew from 36% to 56% during the 30-year period from 1967 to 1997. Similarly, there have been some dramatic shifts from manufacturing to services in terms of creating new jobs and wage gaps between employees in the providers and products sectors and those in the material goods sector at the expense of the latter. It is also noteworthy that the fastest-growing jobs in the United States and the rest of the developed world are in the service sector, including doctors, lawyers, engineers and sales market professions (Council on Competitiveness, 2005). Service economy is also now the dominant part of the economies of many countries in Asia and Europe. For instance, it ranges from 51.8% in Korea, 54.5% in Ireland and 55.4% in Turkey to 71.6% in the United Kingdom and 69.4% in the Luxembourg.

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The preceding transformations from an industrial to a knowledge-based economy suggested that the employability and the economic success of the graduating students from colleges and universities hinge upon their intellectual capital and the effective use of some intangible assets, such as knowledge and skills as well as the provision of innovative solutions and complex services. This is particularly the case given that companies have been challenged to change their organizational structures in order to give employees more responsibilities to produce and innovate in a democratic, more decentralized and much flatter management structure. As such, the dispositions and skills to do team work and share information across organizational networks became indispensable for doing effective business.

The Changing Characteristics of Students in Higher Education

Changes in the learning styles and preferences of the new generation of college and university students constitute another cause for reforming higher education. A basic premise in the argument of the proponents of reform is that the new generation of students, born roughly after 1980, have been exposed to technology all their lives. Prensky (2001) and Tapscott (1989) respectively characterized them as the “digital natives” and the “net generation”. Similarly, Howe and Strausse (2000) labeled the new generation of college-goers as the “Millenials” and suggested that these students have characteristics which differentiate them from previous generations. Along similar lines, Oblinger (2003) and Brown (2000) maintained that the new generations of students prefer teamwork, experiential learning, hands on applications and activity/technology-based teaching and learning. This technologically-savvy generation of students is also considered to be optimistic, team-oriented and talented with technology (Howe & Strausse, 2000; as cited in Ghaith, 2010). Furthermore, given that they are adept at processing information rapidly, they prefer multitasking and receiving information rapidly, which explains their low tolerance for lectures and their enjoyment of active, rather than passive learning (Frاند, 2000; Oblinger, 2003; Prensky, 2001).

The aforementioned distinctive characteristic of the new generation of college students are also marked by closing/reversing the gender gap in higher education in most countries all over the world. For instance, Goldin Katz and Kuziemko (2006) maintained that the number of American female college students has surpassed the number of males in attendance and graduation after having achieved parity in 1980. This trend in the increase of the number of female college graduates is also reflected in the statistics reported in the UNESCO 2009 Global Education Digest. These statistics suggested that the overall GPI (gender parity index) was 1.08 in 2007 in favor of female students enrolled in higher education worldwide. Specifically, the GPI was 1.04 in the Arab States, 1.25 in Eastern Europe, 1.11 in central Asia and 1.19 in Latin America and the Caribbean. Meanwhile, the statistics showed parity in the enrollment of male and female college students in East Asia and the Pacific (1.00) and only still in favor of males in South and West Asia (0.76) and the Sub-Saharan Africa (0.66). It is also noteworthy that the career expectations and prospects of women have shifted in some significant ways from such female-intensive occupations as teaching and social work to a focus on careers in the various domains of science and technology. These transformations have pedagogical implications to systems of higher education in terms of planning their program offerings and using more democratic and student-centered instructional practices to bridge achievement gaps among students and provide equal opportunities for success and participation.

Why CL (Cooperative Learning)?

The rise of the service economy and the changing characteristics of college students call for investments and efforts in education to produce a more educated and sophisticated workforce capable of cooperating and innovating in order to take up and solve complex problems in an effective and more flexible manner. Specifically, colleges and universities now face the challenges of graduating students who are effective communicators, managers and producer of knowledge and team workers who think critically and creatively and enjoy high levels of linguistic, cultural and technological literacy. Furthermore, as computers have gradually replaced workers, the repetitive, routine and predictable tasks have become more increasingly readily automated. This rendered the demand for hiring skillful workers who can communicate and collaborate with others in order to innovate and succeed in a global market driven by knowledge and technology more important and pressing than ever.

Based on the above analysis, we propose the use of CL as a teaching methodology to foster infusion of 21st century skills as well as to help students acquire the dispositions and attitudes needed for success in the knowledge-based economy. A basic premise behind this proposition is that CL has been established as an effective pro-social approach to teaching and learning as well as to improving the communicative competence and social skills of learners (Slavin, 1995). Furthermore, CL is supported by an impressive theoretical and empirical research base that established its relevance in addressing and realizing a wide range of cognitive and non-cognitive outcomes in modern education (D. W. Johnson, R. T. Johnson, & Holubec, 1991). Because CL provides maximum opportunities for integrated instruction in a supportive environment and given its varied and generic applications in various disciplines, it is particularly well-suited as an instruction approach that can be used at all levels of schooling, including the tertiary level.

The dynamics of the various CL methods and strategies are in harmony with the pedagogical implications of the social and cognitive constructivist theories of learning. Furthermore, CL enhances the motivation and psychosocial adjustment of learners as well as helps them construct and negotiate meaning as they work together in small cooperative groups according to the principles of heterogeneous grouping, individual accountability, positive interdependence and group processing (D. W. Johnson & R. T. Johnson, 1994). Consequently, as learners cooperate with other peers from different gender, achievement levels, and ethnic backgrounds and so forth in order to achieve common goals, they become better prepared to perform more effectively in an interdependent and complex work environment. Furthermore, as they remain accountable for their own learning and reflect on their progress, they develop the dispositions needed to assume responsibilities and to do their best to achieve good results. Because learners in CL restate expand and elaborate their ideas in order to convey and/or clarify intended meaning, they improve their social skills and communicative competence as suggested by Olsen and Kagan (1992). Furthermore, it has been established that CL enhances academic achievement and develops learners' abilities to process information beyond the level of receptive understanding by offering redundancy and multiple venues of information access and tasks (Webb, 1989). Furthermore, CL encourages active participation in genuine conversations and collaborative problem-solving activities in a class climate of personal and academic support thereby empowers learners from marginalized groups and provides them with autonomy and control to organize and regulate their own learning, which improves psycho-social adjustment and social cohesion (Clifford, 1999).

What Is CL?

Currently, CL is perceived in educational circles as a generic term for a number of instructional techniques and procedures that address conceptual learning and social development. Shaaban and Ghaith (2005) described a number of CL models that include: The structural approach (Kagan, 1989), group investigation (Sharan & Sharan, 1992), student team learning (Aronson, Blaney, Stephan, Sikes, & Snapp, 1978; Slavin, 1995), curriculum packages (Slavin, Leavey, & Madden, 1986) and learning together (D. W. Johnson, R. T. Johnson, & Holubec, 1991; 1992; 1994). The structural approach is based on using content-free ways of managing classroom interaction called structures. These structures include numbered heads together, round robin, mixer review, taking turns, three-step interview and many other structures that are relatively easy to implement and can be categorized into team and class building, communication, mastery and critical thinking structures. For example, Kagan (1989) described the procedure of numbered heads together as follows:

Step 1: Students number off within teams;

Step 2: The teacher asks a high consensus question;

Step 3: Students put their heads together to make sure everyone on the team knows the answer;

Step 4: The teacher calls a number at random and students with that number raise their hands to be called upon to answer the question and earn points for their teams.

Group investigation is most useful to do some relatively complex assignments, such as designing a new product, writing a research paper or preparing and delivering an oral presentation. Work is divided among team members who work individually and in groups to complete specific tasks and then reconvene to report on their group assignment or present their final product. Y. Sharan and S. Sharan (1992) explicated the procedure of doing group investigation as follows: Students are assigned to heterogeneous groups of four or five members each, following which the teacher presents and explains a complex task to be completed by the groups. Group members then meet in buzz groups where each member expresses his/her ideas about what to investigate. A recorder in each buzz group writes down the ideas and reports them to the entire class. Each group member then carries out his/her investigation, following which the group reconvenes to share findings on the basis of which a final product is produced and presented to class.

Student team learning includes the Jigsaw method and its variations and the STAD (student teams achievement divisions) method. The Jigsaw method has five major components of lesson planning: Reading, expert group discussion, team report, and testing and team recognition. Meanwhile, STAD is organized around the components of teacher presentation, team study, individual quizzes, and individual improvement scoring and team recognition. The main difference between Jigsaw and STAD is that Jigsaw is well-suited for teaching materials in a narrative form, such as a story or a book chapter; whereas, STAD is useful in teaching material that require single correct answers, such as language rules and mechanics, mathematics, science or social studies. Curriculum packages are specific programs for teaching mathematics and language and include the cooperative integrated reading and composition program.

The “learning together” model organizes instruction according to the principles of positive interdependence, individual accountability, promotive face-to-face interaction, social and collaborative skills and group processing. Specifically, positive interdependence means that the success of students is linked with the success of their team members and may be structured through mutual goals, joint rewards, shared resources, complementary roles and a common team identity. Individual accountability means that the performance of

each member is assessed and results are given to the team and the individual so that team members cannot get a free ride on the efforts of their teammates. Yet, team members still help, share, encourage and support each others' efforts to succeed through promotive interaction within their groups. Furthermore, they use and develop their interpersonal and small group skills of leadership, decision-making, trust-building and conflict management. Finally, the team members perform group processing to reflect on how well the team is functioning and how its effectiveness may be improved. As such, the main difference between the "learning together" and other CL models is that this model is less discrete and less prescriptive than the structural and the student-team-learning models that employ a "lock-step" and somewhat "prepackaged curricula, lessons, and strategies in a prescribed manner" (D. W. Johnson & R. T. Johnson, 1998, p. 226). Rather, the "learning together" model provides a conceptual framework for teachers to plan and tailor CL instruction according to their circumstances, student needs, and school contexts (for further description of the various CL models) (Kluge, McGuire, D. W. Johnson, & R. T. Johnson, 1999).

Conclusions

This paper has described some of the current challenges that face systems of higher education worldwide due to the rise of service economy and the changing characteristics of the new generation of college students. These challenges suggest that reform efforts in higher education should equip college graduates with a range of skills and dispositions, using student-centered and efficacious instructional methods and strategies such as CL. The rationale behind using CL to infuse 21st century skills and dispositions while developing the academic content and procedural knowledge bases of the various academic disciplines is based on the premise that CL encompasses a wide range of content-free and generic forms of classroom management and instructional methods. In addition, while CL is not a panacea to the problems of higher education, its elements of heterogeneous grouping, individual accountability, positive interdependence and group processing make it particularly well-suited to promote skill development and content learning in a motivating, stress-reduced and supportive learning environment.

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