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The Educational Value of knowledge Transmission Through International Collaborative Communication

Ahmed Alanazi

University of Kansas, School of Education

Alanazi@ku.edu

Abstract: Online international collaboration has been significantly important in the last few decades especially with the evolving development of information communication technologies. This paper summarizes what is in the literature in support of the important dimensions that educational workforcesneed to implement to expand collaboration internationally. In particular, this paperbeginswith Dewey's most basic argument, education is a process of communication. This paper sheds light on ways in which online international collaboration is educationally significant, whether academically, economically, or culturally throughout deliberating about significant salient key components in the body of literature in learning and teaching domains. These investigated ways include the importance of knowledge transmission, the revolution of technology in education, knowledge distribution, learning as a social activity, experts'integration, and diversity in online communities.

Keywords: International collaboration, Knowledge Transmission, Communication, learning environments, social learning.

INTRODUCTION

John Dewey argued that, at its most basic, education is a process of communication. John Seely Brown, a researcher in digital environments, states, "John Dewey perhaps was 75 years ahead before his time." (DMLResearchHub, 2012). Several methodsindicatethe importance of online international collaboration and how it is educationally significant, however, six educationally significant ways will be discussed in this paper. They are the importance of communication in education, technology as a facilitator, the distribution of knowledge, socializing learning environments in education, the unification of international pioneers' concepts, and diversifying learning environments in education. Per Dewey's Democracy of Education (1916), education is a necessity of life. Dewey demonstrates that education is the means for social continuity in life and is interest-learner-based. Dewey in his book expressed thoughts to emphasize the importance of communication as an educational device. One of these clearly expressed ideas is the transmission of knowledge through communication.

One of the significant ways in which online international collaboration is educationally significant is transmitting knowledge through communicating ineducational learning environments.

Dewey argued that, at its most basic, education is a process of communication. Dewey presents the notion that individuals naturally die, so previous knowledge needs to be preserved by transmitting it from the current generation to the next. During this transition, people's communication in a society is a significant factor in transmitting knowledge. Dewey describes communication as "a process of sharing experience till it becomes a common possession" (1916 p. 9). Ancestor societies generate ideas, thinking methods, thoughts, and beliefs. All of the aforementioned contributions occurredthrough communication. This passion is owned by one generation and then the current generation conveys it to the next tobe inherited by future generations. By transmitting knowledge from previous generations, and sharing it among different societies of the world, common knowledge develops into universal comprehension. Our society has common beliefs, and the only way this

knowledge exists is because of communication. In addition, people require a common understanding to achieve their common goals as a community. The terms communication, community, and common are not tied verbally, as Dewey believes. There are several tangible and intangible shared ideas and hidden constructs in any society. For example, societies communicate to create and possess common knowledge, and this knowledge becomes universal when shared in larger societies. Dewey states that "The most notable distinction between living and inanimate things is that the former maintain themselves by renewal" (1916, p. 4). Through communication, we can advance our learning as well as dedicate application technologies and educational strategies to strengthen the core of our education. "Education is thus a fostering, a nurturing, a cultivating, process" (Dewey, 1916, p.9).

In general, to educate or learn in schools, there are two types of communication and several substantial strategies that can be used in promoting students' knowledge and enhancing their learning outcomes. Research shows that students learn technical skills and new applications from communicating with peers from other cultures. Dewey emphasizes two modes of education: formal and informal. Formal education is what we utilize today to preserve and transmit knowledge through schooling. The other type, informal education, is what occurs through unofficial channels, without intention. For instance, Bandura's Social Cognitive Theory (1986), explains how informal education occurs among social groups. This mode of influential communication is crucial in its outcomes and influential in both educational learning and teaching. As Dewey states, "As societies become more complex in [its] structure and resources, the need of formal or intentional teaching and learning increases" (1916, p. 9). Thus, conceiving knowledge has changed significantly in the last few decades because of new communication technology tools. How modern ideas, thoughts, and knowledge are retained and transmitted have evolved more recently.

Another significant way in which online international collaboration is educationally significant is the evolution of technology in education.

To establish the objectives of collaboration and to give students an equal footing, students must use educational communication technologies to connect with international peers (Schrage, 1990). With the revolution of new technologies and universal educational strategies, spreading and retaining knowledge iseasier and has become more universal. In the past, publishing and distributing Dewey's books was time-consuming, and it was challenging to learn and then teach his methodologies. However, learning is now much easier, more accessible, and almost effortless through online materials. This does not mean thata formal education is not necessary, but the role of technologies and exponential growth of software applications has made preserving and transmitting information more convenient for both teachers and learners. With the swift growth of social media and communication applications, the world has been united and globalized. People from different countries, languages, cultures, and ethnic backgrounds are interacting in an online society.

As Dewey states, "All communication is like art" (1916, p. 7), so facilitating communication methodologies is important to advance students' knowledge and improve their abilities and skills after discovering their interests. There are two commonly used forms of communication in online learning environments: asynchronous and synchronous communication (Holmberg, Bernath,& Busch, 2005; Keegan, 2002; Hrastinski, 2008; Means, Toyama, Murphy, Bakia, & Jones, 2009), and each has its own educational strategies. With the evolution of technologies and the increasing number of students in growing school classrooms (Damarin, 1998; National Center for Educational Statistics, 2014), we cannot easily reachand effectively discover students' interests without facilitating learning via educational means. Schools, as Dewey mentions, are only one resource of teaching and learning, however, they are, as he so clearly stated, a superficial resource in relation to others. On the other hand, these resources must be considered since they are some of the most influential resources for effective learning and teaching methods. Within these resources, there are several strategies and methods

for effective teaching and learning, and with the current evolution of technology and the social life of digital information, educators need to take advantage of technology to facilitate learning and teaching styles.

Dewey's main goal here in this context is to ensure that students be enriched in order to learn, and their environment often consists of school, society, and family, and these should be united to make realistic curricula in order to acknowledge children's individual differences. Dewey argues that education is a growing process in all individuals' lives asindividuals, as a whole, are the core of the community. As a result, they need to socialize with each other to enhance their development process.

Another significant way in which online international collaboration is educationally significant is the distribution of knowledge.

It is important to realize that knowledge and skills are distributed through social practices, (Pemberton-Billing, Cooper, Wootton, & North, 2003), and among individuals, both locally and internationally. When individuals socialize and collaborate with each other, they share their knowledge which fosters creativity and solves problems. Individuals have different skills and whencollaboratingput their effort into one task to effectively, accurately, and quickly accomplish mutual goals. The more that students communicate in collaborative learning environments, the more they utilize their experiences to employ knowledge and skills to achieve academic goals. Thus, using experiences to share knowledge increases when groups are diverse and leads to enhanced group performance through the active exchange of knowledge.Cummings(2004), states that sharing knowledge is strongly associated with group performance. This demonstrates thatthere is a positive relationship between group diversity and knowledge sharing.

One of the essential beliefs in some societies is that the more you help, the more youwill learn. Distributing knowledge is essential in learning.By explaining to peers one would enhance performance more than when studying individually - it becomes a community of collaboration. One advantage of collaboration is that it decentralizes the source of knowledge in learning environments. Students participate with and contribute to each other by sharing experiences and contributing to groupwork. Collaboration decentralizes the source of knowledge in learning environments and transfers knowledge internationally from the people who possess it becoming one of the leadingreasons to extend online international collaboration. A prominent example in the world of education theorists is Vygotsky. He was influenced by several psychologists, such as Wilhelm von Humboldt, Alexander Potebnia, and Alfred Adler, and he in turn also influenced other global psychologists.

Another significant way in which online international collaboration is educationally significant is through socializing learning environments in education.

By collaborating internationally, we create a new culture of learning (Brown, Collins, & Duguid, 1989). Extending learning to international environments is more helpful than keeping the learning local. Since people learnfrom their local environments, andinteract with different minds around them, they can learn more from people of different cultures, values, and education systems.Education is a right of every individual in each society (Dewey, 1916; Washington, 1986) so individuals have the right and freedom to learn based on their own interests. In other words, since education is the right of every individual, those individuals have the right to be taught based on their interests, not on their predecessors' interests. Their predecessors had knowledge, opinions, and special views, but those are not necessarily the best fit for their children and their interests may not be applicable to their children. At the beginning of his education, Washington, an educational philosopher, was immersed in learning new ideas. He stated that "The older I grow, the more I am convinced that there is no education which one can get from books and costly apparatus that is equal to that which can be gotten from contact with great men and women." (Washington, 1986). Therefore, societies play a significant role in passing knowledge from one generation to the next. As educators, we are no longer able to keep education

local. With the revolution of technology and educational strategies education has become internationalized. It is valuable in learning environments where students exchange knowledge with their peers from different cultures. When learners are immersed in knowledge, they realize how important it becomes to collaborate with others from different cultures. It is clearly significant in the current literature to incorporate the factor of diversityintomodern education. Otherreasons to expand collaboration internationally are the following: technology facilitates the process of communication more than it ever has; the economy has become more international than ever; and knowledge is being distributed all over the world. If we believe that people vary in terms of knowledge, intelligence, performance, and intellectual abilities, we, as leaders, need to start focusing our education on internationally collaborative approaches.

Another significant way in which online international collaboration is educationally significant is the unification of international pioneers' concepts.

When speculating about the pioneers of education as a whole, we realize that education is not locally centered. However, educators and researchers continue to foster only local education practices. Why do we continue to constrain our education by geographical borders despite research that proves the contrary is most beneficial? The followingtable is valuable to point out the global pioneers who have enhanced the importance of international collaboration because they joined forces in a unified direction from a common starting point towards shared goals. To mention a few of the educational pioneers in the past and current literature, we notice that pioneers in education are located all over the world.With these examples from different nationalities in education, it is time to connect their ideas andbeneficial research findings to create outstanding collaborative learning environments for students to learn easier, faster, and more efficiently. The list of outstanding pioneers enhances the importance of international collaboration. In the literature of distance education, pioneers in educational technology include

Name	Ethnicity	Specialty	Date
John Dewey	American	Philosopher, psychologist, & educational reformer	1859-1952
Albert Bandura	American	Social Learning Theory	1925- Alive
Jean Lave	American	Social anthropologist, pioneered the theory of situated learning and communities of practice	1939- Alive
John Seely Brown	American	Specialized in digital culture & social learning	1940- Alive
Starr Roxanne Hiltz	American	Computer-Mediated Communication -Information Science /Information Systems	1942- Alive
William Edward DuBois	African American	Sociologist, historian, & civil rights activist	1868-1963
Booker T. Washington	African American	American educator & author	1856-1915
James Baldwin	African American	Novelist, essayist, playwright &poet	1924-1987

Börje Holmberg	Swedish	Distance education	1924- Alive
Elizabeth Stace	Australian	Distance Education	Unknown- Unknown
Desmond Keegan	Irish	Distance education	1936- Alive
Linda Harasim	Canadian	Theorist of online education	1949- Alive
Charlotte Maria Mason	British	Invested her life in improving the quality of Education in England	1842-1923
Michael Grahame Moore	British	Transactional Distance Theory	Unknown- Alive
Lucy Suchman	British	Anthropology of Cyber cultures	Unknown- Alive
Maria Montessori	Italian	Physician & educator best known for the philosophy of education	1870-1952
Lev Vygotsky	Russian	Psychologist of social learning	1896-1934
Jean Piaget	Swiss	Child development, Cognitive theory	1896-1980
Paulo Freire	Brazilian	Educator and philosopher	1921-1997
Wilhelm Wundt	German	Physician, physiologist & philosopher	1832-1920
Albert Einstein	German	Physicist - philosophy of science	1879-1955

Another significant way in which online international collaboration is educationally significant is through diversifying educational learning environments.

Diversity is one of the most commonly investigated variables in the literature of online international collaborative learning environments. Many research articles in the 1990s (Jenks, 1993; McGrath, Berdahl, & Arrow, 1995), 2000s (Cummings, 2004; Gibson & Gibbs, 2006; Shachaf, 2008; Staples & Zhao, 2006; Connaughton&Shuffler, 2007), and until mid-2016 (Krumm, Terwiel, &Hertel, 2013; Gibson, Huang, Kirkman, & Shapiro, 2014; Han& Beyerlein, 2016) focus on online international collaboration that examines the diversity of collaborative group environments. Diversity is one of the most critical dimensions in group performance; it affects group performance both negatively and positively. For some variables, such as decision making, diversity affects it positively. On the other hand, for other aspects, such as communication and coordination, it negatively affects it (Gibson & Gibbs, 2006; Krumm, Terwiel, &Hertel, 2013). Diversity has a positive impact on decision making among group members (Shachaf, 2008), and it also has a positive correlation with group performance (Cummings, 2004). Even though diversity in most research indicates nationality diversity, in other research it also indicates structural diversity (Cummings, 2004). Cultural diversity also leads to better creativity and decision making among group members because those group members would have different perceptions, and ideas which would more likely lead to better group performance (McLeod&Lobel, 1992). When a group is more diverse, it becomes competitive through a whole pool of competing ideas so that every group member tries to formulate the best solution for the project and advance the group's performance. When the group has members from different fields, the group becomes more diverse in educational collaborative learning environments,such as, group A is expected to perform better than group B. For example, if group A includes a member whose interestsare

in educational technology, educational statistics, and educational philosophy, because of the diversity of group membersfrom different fields, the group would perform better than group B which consists of only three educational technology members. Diversity is clearly important as a contributing factor to international collaborative learning teams. Several studies, such as Maznevski&Chudoba, 2000,have shown that when the team is diverse, it outperforms single-culture teams. As studies have shown, international collaboration has a significant impact on education. The more students collaborate within international environments; the more decisive results are found.

Another significant way in which online international collaboration is educationally significant is diversifying the online teams in learning environments.

Besides the importance of internationalizing our education by diversifying the groups in collaborative environments, another reason for this important approach is the mobility of today's workforce. It is impossible to transport leaders and outstanding problem solvers to global locations when they are needed, however, utilizing and internationalizing collaborative environments in online learning mobilizes those people into cyberspace (Yiu, 2014).Jarvenpaa and Shaw (1998) have found that geographic diversity positively affects the frequency of communication in project work during the beginning of a project.Knoll(2000) states that cultural diversity is an effective element in online international teams. Moreover, Maznevski(1994) states that when groups in collaborative environments are diverse, they perform at least the same as, and at other times, better than, non-diverse teams.As Han and Beyerlein (2016)state, connecting international experts and pioneers is essential and contributes factors toward achieving excellence in virtual collaborative team work. Connecting those experts enhances the group's performance and increases knowledge sharing. Other studies also show that diversity is a contributing factor to successful collaborative groups. Maruyama, Moreno, Gudeman, and Marin (2000) state that higher education researchers report that diversity in collaborative group research and in team members affects student views, and as a result, increases their learning. They also state that diversity has been anessential element in learning and teaching both directly and indirectly. Stahl, Maznevski, Voigt, andJonsen (2010), moreover,argue that cultural diversity enhances creativity and the satisfaction of team members.

Conclusion

As discussed throughout the paper, educational institutions are in need of expanding their collaboration internationally and to focus on adopting outstanding pioneers' methodologies in theirindividual fields. Educational researchers also need to shed light on the aforementioned significant factors that enhance online international communication to cultivate learning environments. Communication more than ever has been facilitated by rich information communication technologies in students' awareness; communication and collaboration strategies are also facilitated and supported by these communication technologies for individuals. These ways mentioned earlier are a few salient pointson the importance of online international collaboration while taking other aspects into consideration. It is the author's belief that these factors contribute to higher education institutions not only academically, but also economically, and culturally.

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