

## **INTEGRATING INTERNET PROTOCOL TELEVISION (IPTV) IN DISTANCE EDUCATION: A Constructivist Framework for Social Networking**

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### **ABSTRACT**

New communication technologies and constructivist pedagogy have the great potential to build very powerful paradigm shifts that enhance Internet Protocol Television (IPTV) in distance education. Therefore, the main purpose of this chapter is to explore the new concerns, issues and potentials for the IPTV delivery of distance education to multicultural populations.

In this study, the design strategies and principles of how to build social networking based on constructivist learning theory are discussed in order to generate a theoretical framework that provides everyday examples and experiences for IPTV in distance education. This framework also shows the needs, expectations and beliefs, and strengths-weaknesses of IPTV in distance. In short, this framework concentrates on discussing the main characteristics of IPTV in distance education and describes how those characteristics can help build constructivist online communities.

**Keywords:** Internet Protocol Television (IPTV); distance education; constructivism; social networking.

### **INTRODUCTION**

Interactive Television (ITV) is one of the most effective distance education delivery tools. ITV also helps curriculum designers who draw up curricula in their planning and development and enables them to utilize communicational design principles and pedagogic strategies. One of the major advancements in ITV is Internet Protocol Television (IPTV), through which television and/or video signals are distributed to subscribers or viewers using a broadband connection over the Internet Protocol.

This method of distributing television content over an IP enables customized and interactive user (distance learner) experiences. This different way of using ITV may force organizations, institutions and producers to develop and integrate IPTV applications into distance education better learning outcomes.

Besides, IPTV can provide more collaboration between distance learners, distance educators and interactive content than traditional television applications. IPTV encourages existing passive television learners to become more actively involved in their learning activities.

However, there is limited research and only a few theoretical articles on IPTV in distance education. There is also limited research on new communication styles and abilities and how they might assist lifelong constructivist learning drawing on real-life experiences. This study breaks new ground and addresses key questions about building social networking through IPTV. The authors place a strong emphasis on the way that IPTV can feel the values of diversity and help promote a multicultural communication atmosphere, enhance the educational experience of both adults and the young, support positive and collaborative milieus, advance excellence in democratic partnerships, and develop individual growth and collective action. This chapter also introduces a theoretical approach to help the reader understand effective practices in developing interactive partnerships in social and environmental justice via IPTV. This framework emphasizes how IPTV fosters multi-generational partnerships and mutually beneficial relationships among digital participants to implement collective action.

### **PURPOSE OF THE STUDY**

This paper explores the new concerns, issues and potential for innovation related to the IPTV delivery of distance education to multicultural communities. IPTV is envisioned as a key player in the upcoming convergence of IP networks in view of the fact that the education community, the research community and industry have almost overcome the technical issues of integrating IPTV service into the existing and/or redesigned infrastructures (Won, Choi, Park, Hong, Lee, Hwang, and Yoo, 2008). However, the consequences of introducing IPTV into distance education have not yet been thoroughly studied (Ryu and Wong, 2007; Shin, 2006; Taplin, 2008; Tian, Wu, Sun and Kam-Wing, 2007). A successful distance learning program must not only utilize cutting-edge technology, but should also encourage the development of innovative methods to address the needs of diverse communities.

The changing world demographics force educational organizations to reconsider their existing distance learning programs. In many cases, the development of new models is required to meet the needs of culturally diverse learners. At the same time, institutions should be considering the potential of IPTV and other forms of distance learning delivery to reach completely new lifelong learners.

As suggested by Lagier (2005), the ability to bring together diverse individuals in IPTV provides unique opportunities for innovative constructivist learning milieus. Based on the abovementioned main purpose and concerns of this chapter, the key questions are:

- To what extents can online learners' skills improve, especially regarding their constructivist communication styles and abilities when IPTV is used in distance education?
- What kinds of online learning experiences are associated with building constructivist social networking through IPTV?
- What are the elements of the constructivist framework for empowering social networking with IPTV in distance education?

In short, the chapter introduces IPTV as a novel technology while the thrust of the argument is around social networking.

We argue the case that using IPTV is more beneficial than utilizing a learning management system that incorporates streaming video and instant messaging or blogging capabilities.

In this context, the authors also argue that social networking can be an important component of constructivist learning;

- to explicate the importance of progressive concepts as defining significant and transformative learning in the higher education context;
- to identify historical and other obstacles to their implementation;
- to raise awareness of the potential of information technology for overcoming these obstacles; and
- to identify those factors which may diminish or impede this realization of constructivist teaching and learning through new technologies.

## **THEORETICAL BACKGROUND OF THE STUDY**

It is crucial that consideration is given to generate new distance milieus through IPTV in which learners are able to take greater responsibility for their own learning and constructing their own knowledge (Resta, 2002). For that reason, in this section, we discuss IPTV, social networking and constructivism as the foundations of the framework for IPTV in distance education.

### ***What is IPTV?***

Research has been continuing into the concept of interactivity in television, since the rise of teletext applications and call-in programs: these were pioneered in the 1990s and have been applied ever since. IPTV is a specific approach to ITV. The early version of IPTV was TiVo, which enabled users to capture television programming on internal hard disks for later viewing (Shin, 2006). Although its predecessor is TiVo, IPTV supplies and serves more applications than TiVo as is below.

Since there are differing approaches and applications in the ITV field, IPTV should first be defined. According to Shin (2006), IPTV is a method of distributing television content over an IP which allows a more customized and interactive user experience. The end consumer receives the content through a set-top box which is connected via a broadband network (Martinsson, 2006). On the other hand, Agrawal, Beigi, Bisdikian and Lee (2007) state that IPTV promises a rich television viewing experience to the customers by delivering digital TV programming.

Burbridge (2006) explains that including two-way capability and providing a truly interactive experience are the key factors of IPTV. In other words, it is possible to define IPTV through the following features, it is a new ITV distribution method which uses broadband IP connections and is capable of producing a high level of communications or experiences to its prospective users.

Because of the IP (Internet Protocol) part, some people may think that IPTV and Internet TV are the same applications; but IPTV is different to Internet TV. One of the main differences is the resolution capability. IPTV uses the whole TV screen for either full motion productions or still images with high resolution while internet TV mostly uses small display sizes for full motion pictures. If the full screen size of the computer monitor is used for full motion pictures, resolution problems will generally appear, especially in the video-streaming Internet applications. Martinson (2006) discusses the differences between IPTV and open Internet Video Services (IVS) (Table: 1).

Since there is a point-to-point connection, IPTV can provide individual broadcasts for its every user. Video-on-Demand (VOD) applications are one kind of broadcast. Yarali and Cherry (2008) point out that in an IPTV environment everything can be involved in an on-demand stream, in a sense, because of broadcasts to suit the individual. A user can decide to watch a program or a movie from the video store whenever the user wants with VOD application. Moreover, there may be a chance to provide a communication line with a chat-based infrastructure among locally dispersed viewers who choose to view the same movie or program at the same time (Burgoon, Bonito, Bengtsson, Ramirez, Dunbar, and Miczo, 2000). Electronic Program Guide (EPG) and Personal Video Recorder (PVR) are other services of IPTV. EPG will be specialized for the personal needs of the consumers (Martinsson, 2006). Set-top-boxes will also have a feature for saving anything on the screen for future viewings. Because of individualization, people have the choice not to watch any advertisements or commercial presentations, or to choose only those relevant to their interests. This feature explains why budgeting for IPTV is an important issue for potential users. As a result, the argument between using IPTV versus using a computer might be strengthened by a cost benefit analysis between the two delivery modes. Alongside these features and characteristics, IPTV gives access to connect to the Internet.

**Table: 1**  
**The differences between IPTV and Internet Video Services**

	IPTV	IVS
<b>Footprint</b>	<b>Local (limited operator coverage)</b>	<b>Potentially supranational and worldwide</b>
<b>Users</b>	Known customers with known IP addresses and known locations	Any users (generally unknown)
<b>Video Quality</b>	Controlled QoS, <i>broadcast</i> TV quality	Best effort quality, QoS not guaranteed
<b>Connection Bandwidth</b>	Between 1 and 4 Mbit/s	Generally below 1 MBit/s
<b>Video Format</b>	MPEG-2 MPEG-4 Part 2 MPEG-4 Part 10 (AVC) Microsoft VC1	Windows Media RealNetworks QuickTime Flash, and Others
<b>Receiver Device</b>	Set-top box with a television display	PC
<b>Resolution</b>	Full TV display	QCIF/CIF
<b>Reliability</b>	Stable	Subject to connection
<b>Security</b>	Users are authenticated and protected	Unsafe
<b>Copyright</b>	Media is protected	Often unprotected
<b>Other Services</b>	EPG, PVR (local or network)	
<b>Customer Relationships</b>	Yes; onsite support	Generally no
<b>Complementarily with Cable, Terrestrial and Satellite Broadcasting</b>	Potential common STB, complementary coverage, common metadata	Pre-view and low-quality on-demand services

Users can reach their favorite web pages, forum sites, news bulletins, emails or engage in other common Internet activities. In addition, IPTV is a comprehensive network video streaming process, and delivers TV-quality video programming to desktop PCs by

It can thus be argued that IPTV might make a significant educational difference in that users can easily monitor and understand their own involvement in the learning process to make and reshape their worlds.

Providing broadband connections is a challenging issue for the companies and organizations -or institutions including universities, and whether or not they are profit or non-profit institutions -establishing of technological infrastructures with fiber optics from cable companies will require large budgets for both the organizations and the consumer if the infrastructure is either not in place, or is in appropriate (This is especially the case in developing countries and in the rural areas in developed countries). Set-top-box production and its supplements is the other technological dimension of IPTV. In addition, producing interactive programs and providing thousands of movies and programs for VOD applications is an important issue.

After these problems are resolved, IPTV can be supplied to its prospective users. User acceptance of this new medium is related to technology, budgeting, extrinsic factors and intrinsic factors. The extrinsic factors refer to interactive services and interoperable applications with other devices and platforms (Shin, 2006).

An important characteristic of IPTV not yet discussed here is its power for creating social networking among its users. Social networking can be explained as interaction among users without a participant limit. A distinguishing characteristic of being human is an ability to be social (e.g. Weaver and Morrison, 2008). This criterion suggests that the social networking concept was latent in people even though it had not been identified. After the Internet revolution, this concept connected with online activities. According to Simpson and Greenfield (2007) social networking is a Web interaction between users which is facilitated by chat, voice, Web pages, the sharing of videos and friend lists, in a collaborative style. It is also explained as information sharing, collegiality, rapidly accessible group information, and a sense of a shared purpose and mission (Weaver and Morrison, 2008). It is possible to explain social networking within the context of IPTV. Social networking is keeping in touch with other users while sharing information and interactions through the mediation of television (screens) with the help of set-top-boxes and IPs.

### **What is Social Networking?**

Building social networking with IPTV as a worldwide player raises some of the same issues as the Internet. People had to travel to interact with different societies, cultures and subcultures before the Internet age. The Internet and IPTV-like applications changed this phenomenon; it became easy to communicate and interact with others without any traveling. The virtual world enables and enhances this potential in a way that no previous technology could. More than two can cultures or subcultures can interact at the same time.

This new situation presents new opportunities. Persons, societies, cultures and subcultures can now understand each other even though they have not had a chance to meet in the real world due to the long distances between them. There is the possibility of a well-mannered exchange. This might be counted as a positive for human interaction. On the other hand, persons, cultures, subcultures and societies can be confronted with bias and stereotyping as well as the differing values and ethics of others. These biases, stereotypes, values, and ethics may be very conservative for other point of views and perceptions.

In spite of this, there is chance for people to better understand the world they live in and the potential for future beneficial collaboration between cultures and societies. IPTV is one of the tools to help users to communicate and interact with each other. IPTV differs from Internet interactions in some situations. People mostly connect to the Internet environment through their personal computers or cellular phones.

Such devices and equipment invite the user to join the Internet environment individually. IPTV has a potential to create different joining styles. Since IPTV uses the big television screen and one of the important characteristics of television that it is often watched with a group, with family or friends, for example, IPTV invites people to engage with the Internet environment either personally or as a group. Group members in one place can interact with group members in another. In this situation, interaction occurs within two different dimensions. First, the members in the same place interact with each other. Second, members interact with the other member users or groups with the help of IPTV. This is one of the unique characteristics of IPTV.

The future distance online learning society will develop from this. Social networking will mean that no matter what discipline and subject area the learner is interested in, and irrespective of their skills level, they will be part of these digital communities. Digital lifelong learners will also be able to drop in and out of learning, join in learning activity from their homes and offices as well as in formal and informal venues to collaborate and socialize with diverse and global learning societies.

According to Holloway (2004), a range of issues related to social networking that must be taken into consideration, include the empowering of staff to take part the integration of professional teams; the developing of project management skills, and the skills to use relevant software; developing a knowledge of pedagogy, and considering how to support users online; considering how to develop and implement content for the online milieu; thinking about how to promote multicultural communities of practice and how to support staff from the bottom up, empowering them to have an input in the development of infrastructures to support online learning. Social networking, therefore, should provide lifelong learners with the design and structure of the flexible learning contexts as well as the strategies and textures and the critical actions associated with the demands and the specific demands and motivations of a multicultural learning society. In this context, information and communication technologies and online learning design principles must focus on developing and delivering a social networking that promotes effective communicative collaboration between diverse online groups from across the world.

### **What is Constructivism?**

Research on learning cultures debates the social, societal and political aspects of the networked society, and considers a range of issues in distance education, such as academic mobility, quality international exchanges, knowledge production, curriculum innovation, leadership roles -especially for women educators, flexible content development, and the defense- of quality in distance education qualifications. Such considerations may provide a good foundation for proposals for knowledge exchange on quality assurance and the accreditation of these learning cultures as well as the identification of any ethical issues.

A constructivist approach can extend the understanding of the structures, policies, trends and developments of learning culture, in research, distance education and knowledge into building social networking through IPTV. Moreover, a constructivist learning culture can provide the digital community and online communication workers with guidelines to connect with existing and ongoing concerns; make visible invisible interaction gaps; encourage interdisciplinary collaborations; bring the current issues and debates together; make available research findings; deliver information on policies, facilitate multicultural real life practices; encourage systematic operational collective activities to emerge and investigate global communication policy related to the delivery of IPTV programs.

**There are efforts around the globe to reform online education, progressively considered as a critical action for curriculum change to improve equal access and opportunity, and to strengthen constructivist learning milieus. Knowledge obtained in these settings contributes to the policy and practice in the networked society. Online communication workers including researchers and policymakers increasingly recognize the importance of comparative perspectives on knowledge, which should be adaptive, facilitating both individual and social efficacy, and learning, which should involve social negotiation and mediation and take place in authentic and real-world environments. Moreover, content and skills should be made relevant to the learner and understood within the framework of the learner's prior knowledge (Hicks, Doolittle and Lee, 2002; Jonassen, Howland, Moore and Marra, 2002).**

**There is an urgent need to plan and conduct online education developments with a systematic approach that includes identifying needs, selecting the best strategies from among known options, monitoring changes as they occur, and measuring the influence of these changes. Assessing the quality of learning, therefore, can provide online communication workers with a constructivist agenda as a formal evaluation process to address various problems, dilemmas and obstacles within a wide variety of learning objectives. Furthermore, this involves online managers and online communication designers in activist curriculum change, which focuses on authentic experiences in critical dialogues.**

**Understanding the issues and challenges, and the categories, priorities and needs of organizational culture can help online communication workers understand how to manage their roles and tasks to pay careful attention to the diversity of social networking. They must, moreover, understand the importance of their roles and responsibilities in the establishment of global values, norms and ethics by utilizing new communication technologies.**

**Constructivist theory should be the theoretical and philosophical foundation of IPTV programs. Irrespective of socio-economic, cultural and ethical contexts, this foundation can help online learners recreate, renovate and modify knowledge networks, which follows innovative movements in distance education. Due to an increased cultural sensitivity and a pressure for egalitarianism, IPTV should accordingly place an emphasis on the sharing of creative initiatives in organizational cultures that serve as examples of high-quality practice in multicultural circumstances.**

**There exists a common consensus on the authenticity of constructivist learning environments and how they can promote interaction and collective action within the sphere of social networking.**

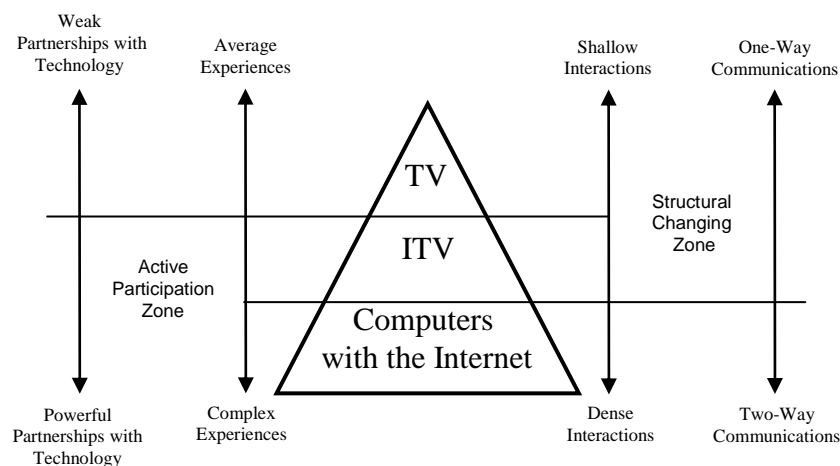
**Distance education institutions should give urgent priority to dealing with quality empowerment, increasing the relevance of social networking, offering quality for everyone, reforming the online educational system, and constructing better constructivist learning systems. IPTV programs, therefore, can support first class assessments of the credibility, viability and quality of either current and/or prospective learning cultures by providing opportunities for fundamental inquiry and critical reflection.**

**A better understanding and measurement of the quality of learning cultures in the diverse contexts provides disadvantaged individuals with quality education opportunities, it pays and addresses their needs as well.**

Moreover, IPTV programs can provide detailed information on constructivist learning environments, which aim to ensure that education presents ideas and values concerning the building of a sustainable future, giving learners the opportunity to learn about the global world. This can be used to build a deep respect for diversity and differences. In this context, online communication workers can help networked society to rethink learning culture by focusing on the more pressing educational and social problems of our time as well as understand the achievement challenges and assessment concerns of lifelong learning.

Furthermore, constructivist learning can provide lifelong learners with pedagogical knowledge and help in the construction of a comprehensive and culture-oriented education system designed to incorporate a multicultural perspective. By meeting the challenges and expectations with fairness and respect, and offering communications that contribute to the sharing of power and an understanding of cultures, social networking in online learning can encourage a deep engagement in lifelong learning activities that examine, through reflective practice, the dynamics of democratic change. IPTV-based experiences should help online participants to contribute to constructive transformation in a variety of educational and professional as well as social contexts and to move their own lives in innovative directions.

**IPTV in Distance Education Utilizing IPTV** in distance education is one of the basic areas to build social networking globally. The concept of distance education accepts and easily incorporates IPTV-based communication technologies as it did previous mediums, such as radio, television and the Internet. Moreover, IPTV-based communication technology, in order to build constructivist social networking and reach the best constructivist outcomes, should consider, produce and deliver distance educational programs to a diverse community worldwide. Viewing is a very important concern for educational communication workers when they want to produce an interactive distance educational program for IPTV. Viewing is also the main feature of one-way traditional television. Yuzer and Kurubacak (2006) emphasize that producing two-way-communications in interactive television and computers with the Internet are different from each other. Table: 1 shows these differences and that there are two main zones (Yuzer and Kurubacak, 2006): the *active participation zone* and the *structural changing zone* (when comparing traditional television, interactive television, IPTV and computers with the Internet).



**Figure: 1**  
**The relationships among TV, interactive TV and computers with the Internet.**  
 From "The Dynamics of Interactive Television (ITV) In Changing World," by T.V. Yuzer & G. Kurubacak, 2005, *International Communication Bulletin*, 41(3-4), p. 52. Used with permission of the authors.



Technology, experiences, interactions and communication styles are changing from traditional television to computers with the Internet. IPTV has its place in the interactive TV arena very closely related to the situation of the Internet connected computers. This means that viewing and interaction go together in interactive television applications, with even live or taped broadcasting having their place in the middle. IPTV applications and programs should have this characteristic even if they are very close to Internet connected computers from the IP part. Although the viewing part is inevitable in educational IPTV applications, live or taped video presentation times should be balanced with the interaction times. According to Gang, Lin, Zonkai, Tang, Ming and Rong (2008), producers should avoid lengthy video presentations and opt for shorter segments so as not to annoy prospective distance learners.

The participation of distance learners in ongoing activities is another important subject. IPTV applications facilitate the selection of content to meet the specific course needs and answer the course issues of the distance learners. These content parts can be in a VOD format. In this situation, a learner can watch the whole or a part of the video for a better comprehension and understanding. This distance learner can also interact with educators or other learners at the same time, if they are involved in the lesson (if they are also watching this VOD). IPTV has a capacity to advise distance educators and learners who else is watching this VOD application in a local area, a region or worldwide. Moreover, a distance learner may take tests or 'answer' or 'ask or answer' questions after watching the relevant video. All learners' answers can be analyzed and the results can be sent to this learner. It is possible to increase question examples remembering the features and characteristics of IPTV. The most important part of this learning environment is how these distance learners or educators interact synchronously with each other or with a group during the ongoing activity. This activity can be either live or taped; but interaction occurs in the real time in each situation.

Alas, Ryu and Wong (2007) explain that the TV viewing experience is different to using a PC as before mentioned. An IPTV participant does not want to watch TV like using a PC. According to Ryu and Wong (2007) again, it is possible to find new ways, such as adding cellular phone-like keys which have letters on the remote controls. Both remote control and cellular phone keys which have letters are very familiar to a distance learner or an ordinary IPTV viewer, and this situation will not disturb them. There must be a place on the television screens to show these chat-based synchronous interactions. It is possible to use virtual keyboards which appear as a part of the television screen, and are controlled with remote controls, to give another example. Shihab and Cai (2007) stress that the next generation networks will support data, voice and IPTV applications. This means distance learners can interact with microphones and speakers. There may be voice confusion since there will be at least two different voices in the location and all of these may want to be dominant, the voice of continuing IPTV application and the voices of other distance learners and educators.

A good regulatory system of the application, taking into account these different voices, could be a solution to this problem. The way the television element is performed and presented (Ryu and Wong, 2007) is never forgotten in attempts to generate human-to-human interaction in IPTV applications. IPTV encourages group activities among distance learners in front of the television screen, as previously mentioned, when they are in the same location. This important characteristic widens collaborative activity and provides important opportunities to share the knowledge and communicate in different ways from the screen, with face-to-face communication or both for distance learners. Content design in an IPTV program becomes challenging when taking the above factors into account.

**Pedagogical issues, technological infrastructure, communication-interaction issues and the topic itself of the distance learning program are the key factors in producing an IPTV application. A group from traditional television production (for the videos), experts on program content (to explain the content correctly), IPTV professionals (for bringing the videos and interactivity together), and distance learning professionals (for controlling the whole process in order to achieve the best outcomes) have to be brought together to create a distance educational IPTV program. Evaluations after the programs help them to provide more collaborative programs in and for the future.**

### **BUILDING CONSTRUCTIVIST SOCIAL NETWORKING THROUGH IPTV**

**According to DeVries, Zan, Hildebrandth, Edmiaston and Sales (2002), the constructivist stream is an idea which is dialectical or interactive. IPTV provides interactive communications for potential distance learners for them to have different forms of knowledge from diverse sources, societies and/or cultures (based on the infrastructure) in their learning processes. Moreover, distance educators may have knowledge to better facilitate their distance learners.**

**This situation is very important from the constructivist perspective; Holt and Willard-Holt (2000) state that both educator and learners are involved in learning from each other. IPTV applications provide distance learners, who have unique needs depending on their diverse backgrounds, with several interactive styles and designs. The societal dimension of IPTV restructures distance education as a social network which has the power to impact on a much broader vision and the diverse audience of the digital community.**

**IPTV can encourage distance learners to discover the unlimited sources of the interactive world to find the answers and to solve real life problems. Moreover, IPTV allows an ease of collaboration between people who can use the different audio-visual communication styles of IPTV to achieve better constructivist learning outcomes. On the other hand, in spite of the tremendous expansion of the IPTV-based applications in building constructivist social networking, the relationships between neighborhood learning environments and global virtual learning milieus is not as yet sufficiently interactive and effective.**

**As the 21st century begins, online social networking is undergoing profound changes associated with global social, societal, political and economic forces. As a result, IPTV programs may play a leadership role in a global reflection on higher education reform. Although IPTV provides a platform for critical dialogues on how best to adapt education systems to the emergence of knowledge societies in generating and delivering multicultural knowledge, it is often less than responsive to the diverse challenges and obstacles, not always knowing how to utilize cutting-edge communication technology to create active responses with competence and assurance, within a complex context and by utilizing comparative perspectives.**

**By investigating in various ways, with a wealth of inquiry and a deep focus on the meaning of quality in online accreditation, virtual organizations in higher education will be empowered. To strengthen virtual organization performance, careful efforts must be made to reform the educational system and in knowledge support management to provide stakeholders with an improved equal access opportunity. Although the majority of online communication workers define quality as largely synonymous with better test scores, IPTV in distance education should pay in-depth attention to the diverse aspects of virtual organization quality. Quality in these communities is a multidimensional concept.**

Moreover, online social networking should accomplish, through a multifaceted effort, an improved online education policy and practice, one that supports the critical discussion must evaluate the rigor and effectiveness of research to see that it reflects the broadening of perspective in the field. By integrating the basic concepts of reflective practices with the best contemporary knowledge elaborates on the specific of decision making processes.

The critical issues of quality accreditation of IPTV programs, the identification of qualifications and the development of international policies for globalization can merge the service for the international public good, the higher education sectors, the needs of online learners and the worldwide public interest. On the other hand, since today's world is complex and knowledge is rapidly developing, learning must continue throughout life. Social networking, therefore, should know how to deal with change that requires reformist intervention in the quality of online organizations, in all of its aspects, to accomplish excellence in learning. The main purpose of these online communities should be to identify the issues, challenges, priorities and needs of the global learners for knowledge management.

The major concerns are to enhance the relevance of education by adjusting constructivist learning processes and to devise multicultural curriculum contents and egalitarian knowledge management systems that can embrace online social networking and their qualities. An additional major challenge is to focus on global democratic citizenships, to respect online human rights and social identities by measuring how to build knowledge management systems which are accountable within a capacity-building framework that is able to make critical decisions and construct powerful action plans.

The major priority is to underline the necessary improvements needed to promote the intellectual and scientific collaborations of social networking which can empower knowledge management in regard to a consideration of global societal values. It is imperative to utilize the advantages and potential of IPTV by guaranteeing quality and sustaining high standards for constructivist practices and outcomes and ensuring that online facilities based on local, national and global networks can increase online organizational efficiency as well as preserving their quality and significance. Therefore, the mission of building social networking through IPTV is to integrate collective acts democratically and to bring together a community of people committed to liberatory online communications.

Therefore, IPTV programs must be designed to represent a range of real-life experiences in their community works and critical praxis, including theorists, theater workers, artists and others committed to transformative pedagogy and social equity. Based on these concerns and approaches, online communication workers can provide diverse learners with the background knowledge needed to understand the communication processes related to democratic and multicultural issues, and to elicit the international dimensions of the challenges faced by education. Designing any social networking can be constitutive of contemporary challenges and tensions as in the role of IPTV technology for sustainable development around the world.

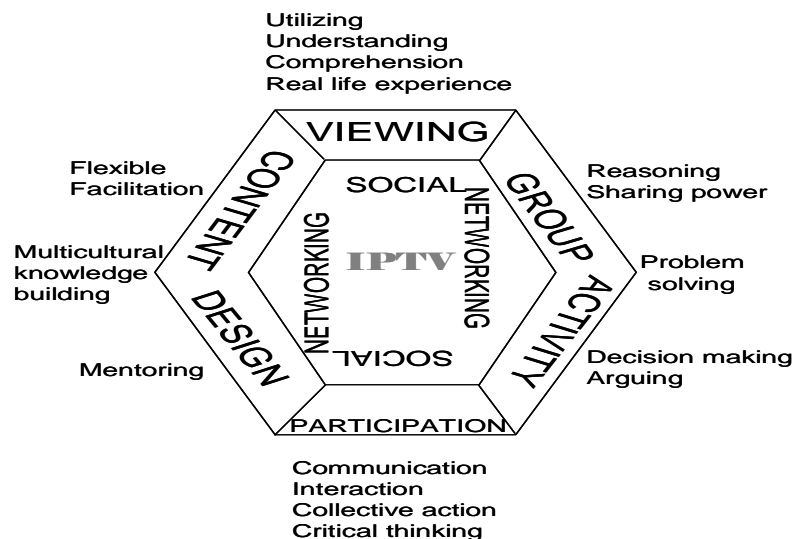
Constructivist learning theory should be the philosophical foundation of IPTV programs. This theory also points out that media vary in certain unique ways and that affects a personal ability to communicate rich information. Empowering online programs as richer media can have significantly positive impacts on design quality, and those effects of the degree of participation.

## A FRAMEWORK FOR EMPOWERING INTERACTIVE COMMUNICATIONS

The most essential elements needed to design, implement and evaluate an IPTV framework are based on interactive program production and the technological backgrounds and educational issues of the countries which use IPTV for educational purposes in distance education programs. Although positive changes are happening around the world to enable this innovative medium, building up an appropriate IPTV framework for any developed and developing country must be discussed and based on the existing circumstances and the possibilities of meeting the abovementioned needs. Regardless of the developments and improvements over the decade, there are still many challenges and risks in establishing and implementing new applications like IPTV in distance education milieus. Launching IPTV requires not only money, but also well-educated and intellectual human resources. Therefore, the framework discussed in this chapter is helpful to organizations and institutions as well as to the people who are interested in this new interactive medium. Providing unique and diverse perspectives with their own communication strengths and weaknesses enables genuine equal opportunities and democratic participation in building online knowledge networks, which are not characterized by power, dominance, hierarchy and competition.

Figure 2: shows the philosophical foundations of and backgrounds to the concepts, insights and skills needed to accelerate democratic transformations to build social networking via IPTV. Based on the established communication standards of the framework, online communication workers must focus on answering these questions:

1. How do the constructivist learning practices change when people experience distance learning online?
2. How will digital learners receive feedback and achieve their learning goals?
3. How does the role of online learners change in IPTV-based social networking?
4. How will online learner interaction with the educators, people and other learners be sufficient to meet constructivist learning objectives?



**Figure: 2**  
**Diamond of IPTV (It is the necessary point of view to generate successful constructivist distance learning environment and social networking in IPTV applications.)**

5. How do these learners' responsibilities change in IPTV-based milieus?
6. What is the online communication worker preparation and training for interacting and communicating with IPTV in distance education?
7. How will digital learners receive feedback and achieve learning goals?
8. How does the role of online learners change in IPTV-based social networking?
9. How will online learner interact with the educators, people and other learners be sufficient to meet constructivist learning objectives?
10. How do these learners' responsibilities change in IPTV-based milieus?
11. What is the online communication worker preparation and training for interacting and communicating with IPTV in distance education?
12. How do online communication workers change the learning culture by building global social networking?
13. How do online communication workers change the learning culture by building global social networking?

Building large-scale knowledge networks and authentic learning milieus can bring democratic changes in IPTV-based communities, empower critical communication possibilities and potentials for lifelong learning, reconstruct dialogical and democratic forms of pedagogy and community engagement and explore powerful democratic communication practices as well as promote dialogues between online communication workers, learners and society, enhance the cognitive learning skills of the digital community and generate motivation for multicultural participation.

To strengthen online learner performance, therefore, there must be careful efforts made not only to reform the educational system but also to support social networking with ready access to knowledge that provides these digital participants with improving equal access and opportunity within the system.

The framework can help the learners to interact more effectively, and to an extent appraise the quality of online learning and empowers virtual communications through IPTV based on the core of constructivist learning process.

#### Conclusion

This paper presents the interactive IPTV as a global access network in distance education. IPTV could be the most transformative learning in distance education history and may reform communication and society through a constructivist approach. Online communication workers have to understand the achievement challenges and allay concerns about how they utilize IPTV.

Moreover, online communication workers should provide the digital community with detailed information about their changing needs and responsibilities in online learning. These digital learners can make their learning plans more efficient and accurate by being involved in interactive online communications and by building social networking. However, there are existing powerful relationships between their constructivist learning attitudes and technological competencies. Online learners mentally prepare themselves for collective actions in their communities. This predisposes them towards IPTV learning.

On the other hand, these learners can lack self-confidence due to their poor technological skills and the knowledge that they derived from diverse backgrounds reflected different learning styles, skills, interests, needs, and cultural experiences.

However, as mentioned by Kurubacak and Kilic (2007), online learners are able to make various meaningful connections among their knowledge, practices and skills to integrate and utilize vast amounts of IPTV-based resources in their learning activities. On the other hand, there is still not enough research into how the obstacle of language barriers might be resolved through the use of IPTV.

Future research should therefore focus on whether or not there is a current technology that can help break down social and/or language barriers to help social networking partners understand each another better.

Finally, IPTV-based learning can be an interactive process, the product of learners and community activity within a global social milieu. These collective activities are the essential fundamentals of the constructivist learning process that IPTV can provide for a wide variation in patterns, styles and quality to build powerful social networking worldwide.

One of the most important alterations is that IPTV opens an innovative era by connecting with both television and Internet links. The present authors have named this new age Compuvision.

Compuvision is an emerging technology and it may evolve into a completely interactive experience in the future. In addition, Compuvision can incorporate the philosophy that lies behind the plan, design and implementation of online knowledge networks, and also benefit global, multicultural populations.

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