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Addressing indigenous (ICT) approaches in South-East Asian learning systems

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Abstract

Purpose – The purpose of this paper is to provide a structural overview about indigenous approaches to learning in South East Asian countries, with a particular reference to education initiatives that have been operating in this region; and especially to investigate information and communication technologies (ICT) systems, in combination with institutional approaches for enhanced knowledge.

Design/methodology/approach – Discussed issues have been designed together, through a rights-based approach that can frame verified access to indigenous cultures under the changing methods concerning ICT, as well as, similarly compare collective challenges for applicable methodologies towards poverty reduction and sustainability.

Findings – This research process has followed developmental options already in place from the recent spread of technologies in Asia. A lack of equal distribution patterns due to the presence of multiple actors has been advanced in this study, with the gradual reduction of opportunities in education in rural/remote settings.

Research limitations/implications – Constraining factors about the compatibility of information systems and policy impacts need functional/operational data of information sources for further testing of explicative explorations.

Practical implications – This research focus, oriented to changing implications of IT solutions in Asia, has increased a comparative analytical understanding about the direct transfer of IT methodologies to subjects for learning enhancement.

Originality/value – This study activity has explored grassroots transition in terms of limiting factors for ICTs adaptability and empowerment.

Keywords South East Asia, Information technology, Information, Communication technologies, Information and communication technologies, Technology, Indigenous knowledge, Value systems

Paper type Conceptual paper

1. Introduction

A current spread of liberal and social enterprises in South-eastern Asian countries has been recognized as a regional developmental path that allows direct sharing of educational thoughts about forms of cooperation among South Asian neighbours. A formal convergence about identifiable forms of aggregation of knowledge functions for the improvement of information about societal education activities needs to apply

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patterns of both qualitative and quantitative models, also by bringing together what we understand about individual and collective social processes.

For the purpose of indicating what might be categorized as common educational achievements, it can be considered that the identification of mounting knowledge depends especially on demanding processes that are able to frame theoretical development schemes in accordance with field designed programmes. Because environmental understandings together with creative theoretical models crucially relate to the accumulation of scientific knowledge depending on a combination of societal observations, and empirical evidence, which become foundational aspects to incorporate human activities, both in terms of acquired knowledge, and for an educational contribution among societies. This knowledge process basically aims to find new meanings about institutional mechanisms for public provisions of information and services.

A cultural understanding about different types of circumstantial conformity for education models developed according to pre-defined set of rules and social regulations has been progressively adapted by South Asian communities in terms of origin and territorial boundaries. In effect, territorial settings have been differently able to shape supportive value-systems which have remained essential prerogatives of existential domains being characterized by religious standards predominantly widespread across this region (Crossette, 2006). Social capacity forces at the regional and at a national level have established a typified development path due to the presence of traditional communitarian expressions that have been translated into social efforts, and modified through perceived conditions about potential benefits of liberalized socio-economic policies.

But cultural expressions have also had difficulties for reducing knowledge gaps, and for maintaining a sustainable and egalitarian empowerment process. In particular, the adaptation to transnational cooperation in South Asia for the creation of common regulative systems which have opted for the inclusion of modern technologies serving to local communities, both in terms of enhanced participation and increased opportunities, has also had challenging effects for the restructuring of development arrangements within and across countries (UNDP, 2001). Institutional frameworks that have adopted equity approaches for the distribution of primary education services have been transformed by contextual environmental factors that have been influenced by cultural determinants for the management of education and for the implementation of policies.

In fact, the significant presence of widespread ethnicities and distinct indigenous groups in a number of South and South-east Asian countries has made possible a multi-dimensional system including separated cultures, languages, and codes of expression, according to a preservation of values for own survival (Jamil and Razak, 2010). Correspondingly, social emerging plans for a sustainable implementation of multicultural settings have motivated the application of social policies targeting a lessening of human vulnerability, and the integration of participative communities for benefiting impacts from the distribution of healthcare and education systems, among other sectors. As a matter of fact, the participation of indigenous groups to this affirmation of educational collective rights has also substantiated collective and effective efforts done to recognize the perennial inclusion of self-determination of groups, whom have been exposed to contrasting social interpretations.

In this essay, we aim at exploring recent changes in cultural applications of information and communication technologies (ICTs) frameworks for a participatory

level of governance in South and South East Asia. The following sections will open a discourse on management systems, and on a systematic inclusion or exclusion of peoples located in rural and remote areas. A final interpretation, at the end of this paper, will particularly provide more elucidations about this review process.

2. The ICT participatory methods of communication

The presence of cultural paths that have been expressed in the form of localities acquires a particular emphasis for this type of analysis about regional education perspectives, which are currently operating in the Asia-Pacific area. The inclusion of analytical documentation that has been mainly derived from developmental studies, which have been oriented to experience different forms of indigenous and ethnic knowledge, still remains central for comparative findings about the interacting levels of local communities within South-eastern Asian cultures.

2.1 Cultural linkages

Cultural expressions of traditional forms of inherited knowledge have created some conditions for a continuous adaptation to the maintenance of local traditions, which have been intertwined with diverse uses of operating tools created from modern learning systems. In order to build-up communication channels with an indigenous knowledge (IK) perspective, it becomes evident that a responsible advocacy process for national education and teaching planning activities, also needs to support conceptual elements of traditional contexts for indigenous learning being present both in contents and diffusion practices.

Despite a rapid intensification of regional policies for an applicable expansion of information capacities, development agencies and governmental actors that have already sustained the integration of community participatory approaches, have also recognized the importance about the identification of local priorities from interest groups who have been interacting regionally. In which case, direct management through innovative ideas about the constitution of a knowledge basis for a common regional understanding can take many variable forms that are negotiated between local communities and development planners in common attempts to work out strategic partnerships for education.

The linkages of individual adjustments in a modified learning process for the inclusion of shared information remains vital to the local people who directly have to verify it with interactive practices, being expressed in developmental methods used as an alternative way for group's knowledge formation. The different levels of confidence and sincere trust that have been created between indigenous people and states' actors in promotion of educational diffusion programs, have allowed for a certain degree of mutual integration. In essence, new integrative knowledge that has emerged from assessed institutional frameworks, has also led to a transmission of changing strategies, locally drafted. Over the years, the superimposition of pre-existing knowledge with systemic learning models promoting national and local education has had a different regional concentration depending on geographical sizes of the country, similarly involved in the local protection of natural resources (Bisong and Essien, 2010).

2.2 Cultural experiences from ICT use: causes and effects

The channelling of subsidized education programs has entered institutionalized informal programs that have tended to reduce illiteracy rates of national populations by

providing the right to education to all including children, but also adults. For the purpose of eradicating poverty and reducing a gap for the acquisition of necessary education skills to be applied on a day-by-day basis, a number of comprehensive education approaches have been meant to reassess national developmental goals by combining learning methods, literacy rates, and education levels, which could simultaneously offer opportunities for a society's at large (Roy, 2004).

Nonetheless, a continuity interaction flow of political and economic initiatives of the Asia Pacific region, more attentive to creating environmental conditions for equity linkages about the distribution of productive resources, or the valorisation of educational interventions, has especially been perceived by groups of people who have already had access to formal education within urban areas, and in wealthier contexts. Unequal changes have revealed that the increasing rapidity of economic shifts in the region have shaped development patterns that include different kinds of participatory practices, where the advancement of rural and indigenous groups has been deepened in a persistent underestimation of embedded cultural elements.

From a socio-economic perspective, continuous attempts that have been made to nearing communities with compatible uses of ICTs have also reflected a basic adoption of developmental tools, which aim to equalize accesses to knowledge, as well as, to define a way out of unsatisfactory conditions in different spheres of human security. In more than a decade, progressive efforts done to rationalize constructive ways to handle compatible applications of new technologies have included set of tools that could function to deliver multiple information, particularly when related to services diffusion, or market activities. In a corresponding delivery of data-system amplification being distributed in a number of regulated/unregulated practices, it has also given rise to an emerging spread of separated initiatives, basically aiming at bridging distant spaces among rural-indigenous people in South Asia.

For this purpose, consistent developmental strategies which have followed this typified direction through the adoption of ICTs with their structural diffusion, at the same time, have particularly been focused on the importance of theoretical programming activities, but without necessarily realizing contextual implications from unique areas of South-South-eastern parts in Asia. In order to be more effective, the management of IT handling tools has spread rapidly without applying specific results emerging from communities, once they entered access stages. The question remains about exploring reacting models through which targeted communities have been integrated in this process. In which, temporal adaptations have also been contextually shaped with its effects based on people life's expectations, and social improvements, both seen in terms of education and knowledge acquisition.

It follows a discussion of education initiatives focused on stream of technologies, with generated promises in mature open settings, from a developmental approach through which we have outlined dimension capacities leading to informed uses of ICT.

3. A preservation of traditional values through ICT

The enhancement of educational tools that can be sustained for preparation of learning programs has to be placed according to the reality of learners, and to transformational effects that can be encountered in cases of interconnected social conditions. Establishing the quality of education trainings that can bring literacy programs to a continuity of subsequent phases while addressing learners' needs in education, it also means to

provide constructive linkages that can operate within communities for a material support of institutions, and private operators.

A generational understanding about education levels spread across a number of community participants in developmental areas can, in some cases, challenge a cultural relationship between people's standard living rights, and external pressures that have been put in order to implement cultural practices toward an increased economic empowerment. In the case of Asian values, they have been related to cultural practices in an open relationship with regional autonomy paths. Such cultural understanding about cross-generational values referred, for instance, to women's contribution to own communities, or to possible physical barriers burdening life cycles, has often remained a matter of debate for decision-makers in charge of transferring technology information.

Otherwise, a diffusion of mass-communication channels through ICTs has positively been perceived as a changing step toward progressive developmental activities that are able to involve newcomers, both men and women, for a more balanced access to societal opportunities, as well as, for personal and communal growth. Having in mind that the female question about a balanced gender approach to education has already been a part of global campaigns that have manifested concrete intentions through (e.g. The Beijing Declaration and Platform for Action), (ESCAP, 2004a, b), in order to find even ways to promote women's accesses to effective uses of ICTs. At the same time, an increase of ethical opportunities in commerce has been done with greater efforts and official commitments at country level. In the last two decades, e.g. the international Beijing platform, together with other governmental initiatives for effective and sustainable development measures, have been captured in awareness conditions that add beneficial elements to a process that has been gradually modifying a communitarian support for common Asian leaderships, targeting local governance techniques for more participation, and mutual consideration.

However, looking at a correspondent presence of multiple stakeholders dealing with constituent principles that should protect in different overlapping dimensions about gender issues, and programming initiatives, also by avoiding the invisible nature of discrimination among societies, it can effectively contrast with available social assets due to emerging limitations from economic and social conditions. Structural conditions, in fact, may not have allowed enough space to incorporate traditional social relationships within institutional frameworks that have been seeking to reduce vulnerable expositions to a contextual societal integration.

In a common understanding, it has been outlined during past succession of Asian international meetings, some relevant development issues for the preparation of regional regulatory practices within the Asia-Pacific region, where a number of regional attendees directly working with state representatives have facilitated the advancement of scientific and cultural cooperation in the field of social development and human security. For instance, by sharing information about a gradual process of knowledge development that can be considered as key element for common improvement of welfare and economic status. The reason why IK makes an essential contribution across societal segmentations, within inner boundaries, in the Asian and Pacific region relies upon the creation of networked activities that can be accessible to remote areas for global communication empowerment.

4. Learning through ICT activities

The fact of bringing information and communication technologies to disadvantaged communities has had relevant implications both in terms of knowledge management,

and for operationalization of mechanisms that can favour extensive access to located entry points in the region (ESCAP, 2007). ICTs' programs that have been systematized in order to address learning aspects of involved communities, have also been prepared for participatory activities that can drive some collective efforts toward overcoming structural difficulties, as in the case of unequal distribution of information. The presence of knowledge gaps during the transformation of cultural environments, critically exposed to different degrees of technology diffusion has been identified mostly by international development specialized agencies for any further promotion of concrete action plans.

Essentially, development action plans that have evolved within global/regional schemes in order to meet local communities' needs with ICTs, have normally resulted from a combination of regional activities aiming at dissemination of knowledge, together with acquisition of collective activities networked through; e.g. Telecentres, IT Kiosks, which have been established across countries in Asia and the Pacific (ESCAP, 2007). But questioning a subsequent recognition of ICTs' communities, it can be formulated more inquisitive efforts to know what type of immediate-long-term effects has been derived for sustainable development of Asian models that have been promoting IT knowledge transfers directly onto people? In forming our theoretical perspectives, organizational models for ICT's community governance have been dependent on continuous interaction process among a number of social participants, being both actors working for a civilian society, in formal/institutional public sector versus informal partners in the private sector.

In a retrospective view, a compatibility of organizational modes of understanding has caused broader implications about practical achievements in addressing concrete living elements of mass populations, with own social beliefs as well as customary practices. Because when moving towards a cultural heritage of nations, with original elements about secular affirmations of theological, philosophical and scientific thoughts, respective founders of nationalized institutional participations can play an important role for the advancement of social conditions (Lourdusamy, 2003). The social advocacy for responsible projects that can provide qualitative national changes in countries like India, for example, becomes material for modern expressions about educational schemes that can leave behind the exploitation of previous practices by addressing contemporary limiting factors that exist in the field of science and human knowledge. Consequentially, an expression of traditional knowledge in defined localities has found an enormous variety of informal learning tools that can provide necessary skills for effective management of resources, which in turn can also satisfy human necessities for food production, environmental securization, or healthcare services.

Committed programs for developmental distribution of compatible technology systems have been designed to theoretically meet long term educational targets for the preservation of (IK). Multi-cultural approaches have systematically formatted shared information between and across group of individuals, by holding to what have been historically passed on in specific locations, about handicrafts production, uses of languages, infrastructures, or land aspects for wildlife reproduction (Hunter, 2005). Understanding the advantages and disadvantages about IT frameworks in cultural sensitive areas, in order to respond to spiritual as well as traditional indigenous customs has been a social negotiating process, in which applied IT methods had to be established with documented evidence for grassroots' communities in South Asia.

This has also meant that a correlation with external factors about the enablement of such methods for education has been supported through constructivist doctrines searching for common learning experiences, with transformed roles about disseminators of information, and assisted indigenous groups. Where local communities have been sequentially provided with potential supporting tools for new knowledge. In this manner, by directly engaging interactive groups at the local level, a number of collaborative projects for the construction of shared learning platforms have also been advocated through knowledge-based centres, in many parts of the world (Blurton, 1999).

The availability of a diverse set of IT tools to access remote locations has also presented challenges for the fact of producing overlapping initiatives that have been unable to respond to implementation plans for the application of new management systems. It is often recalled to a failure of E-initiatives for reasons that have been related with sustainability and monitoring issues. Where at country levels, for example, in India or in Thailand, the promotion of environmental and computerized taxation systems has not been fully implemented or operationalized for the national population (Heeks, 2001).

The collapse of ICT-based networks that has been analysed and designed for the interactivity of remote tribal groups with an operational access to computerized initiatives has been mainly a question of information capacities overlapping the governance of IT exercises, between actors in civil society, governmental agencies, and citizens, with detrimental effects. Instead of a strengthened IT activity with effective uses of e-services through state development policies, that has already happened in African countries, the degree of response for improved connectivity aspects about the information society, has simply resulted in a partial implementation. During the last decade, the strategic challenge of putting systematic IT delivery tools responsible for the modelling of communitarian behaviours oriented to an integration of knowledge, has stimulated a variety of alternative promotions for the design and uses of ICT-based communication systems, where Figure 1, we can identify some key elements.

Some core aspects of a comprehensive ICT planning and management, according to South-eastern Asian traditions, have emerged from developed interaction among indigenous people. In specific conditions, these aspects have also been identified in multiple meanings according to groups' indications, such as tribal communities, or national ethnic minorities, for international empowerment goals in development contexts. A central role of local communities and social rights' protection has been accepted as evident truth to eventually avoid the nature of verified discrimination practices, and consequent exclusion mechanisms.

Essentially, there is an obligation for statal institutions, civil society groups, and indigenous leaderships, to all convene in the same kind of message about information development, and respective degree of social acceptance. In fact, for this kind of preservation of community values, there is the United Nations Declaration on the rights of indigenous peoples, which declares that:

[...] art 8: 1. Indigenous peoples and individuals have the right not to be subjected to forced assimilation or destruction of their culture [...] Art. 16: 1. Indigenous Peoples have the right to establish their own media in their own languages and to have access to all forms of non-Indigenous media without discrimination. 2. States shall take effective measures to ensure that State-owned media duly reflect Indigenous cultural diversity [...] (Meier, 2008, p. 11).

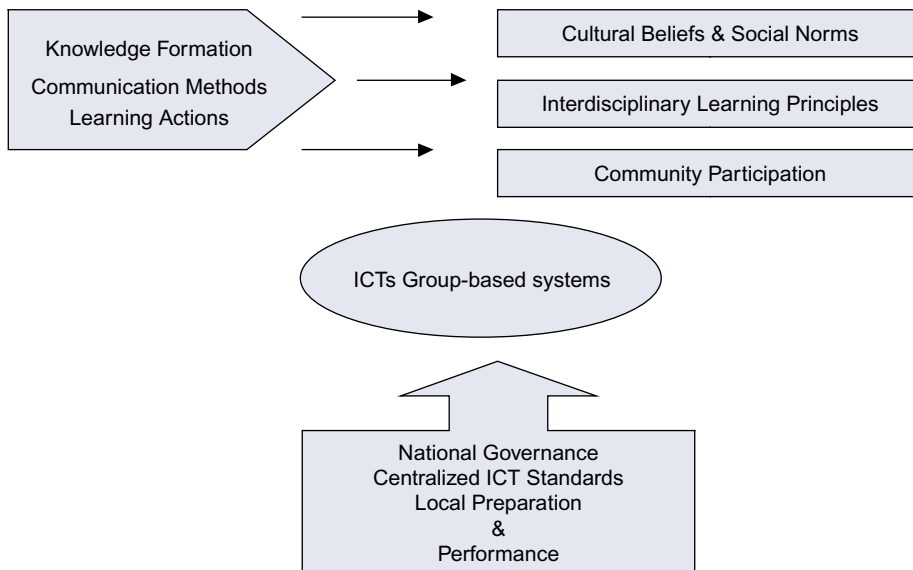


Figure 1.
Technology
integration stages

Source: Model adapted from *Technologies in Eastern Education* (Zhang, 2007, p. 302)

In international forums, that have been run by the World Summit on the Information Society (WSIS), the visualization of ICT strategies and initiatives for indigenous peoples has also taken this preservation path for groups' own identity, and traditional knowledge maintenance.

Openly, formal global consents for networked approaches to development, from widespread regional IT team projects, across South-eastern Asia, have aimed at forming collaborative practices among benefiting communities, often located in rural and remote areas. As mentioned in (Figure 1), above content, it shows that national institutions have prepared centralized management programs that depend on local evaluations and monitoring actions, eventually seeking to overcome mounting effects from uses of new communication methodologies. National and international teams of experts have transferred IT skills in the form of trainings and preparation of educational courses that should primarily generate interest among learners involved in similar projects.

From such preparative frameworks, comes also a Pandora's box paradigm (Baggaleya and Ng Lee Hoon, 2005) because of the fact that this sea of possibilities, ready to bring innovation and transforming learning delivery methods, in rural settings of Asian countries, has brought at least for the immediate future a set of unanswered dilemmas about material carriers, effective presence of educational programs, structural conditions, transportation issues, and general spread of knowledge, which have also caused negative feedbacks at the grassroots level.

The operability of technical learning centres implies a supporting assistance of community members that can facilitate local and regional tendencies towards specific goals that are socially and economically viable for entire collectivities. In the case of a restricted access to IT education trainings and application of techniques, an observer needs also to reflect about distance factors and multiplication of learning centres,

which at the same time require Asian networking initiatives that have been widespread in nature (Baggaleya and Ng Lee Hoon, 2005).

In addition to this, a material preparation of teachers, and R&D activities, for the definition of progressing stages of applied learning technologies in far away regions, can become possible especially through funded initiatives that need to anticipate, and prepare for each and every single learning phase in local communities. From the enhancement of learning skills and abilities for IT language programs, there is the case of the Government of Malaysia that has created opportunities to build-up infrastructures in cooperation with private sector investors. On a national scale, initiatives for ICT in Kuala Lumpur have resulted in Multimedia Super Corridors with the development of Cyberjaya and Putrajaya with e-governance platforms at city level (Lee and Loh-Ludher, 2007). In terms of informal education, single users from home locations have introduced ICT tools in order to assist them in personal relations, but with limiting factors due to language uses, and lack of assimilation through formal channels on information accesses (e.g. the internet).

In parallel studies (Tambo, 2005; Navas-Sabater *et al.*, 2002; Heeks, 2003; Cecchini and Scott, 2003) conducted in South Asia, the digital divide era has been perceived as a strategic policy for global human development. Where at the local level, some emphasis has also been put on determining factors that can contribute to poverty alleviation and community rights' protection. For these purposes, by mainstreaming ICTs to indigenous groups, visible contributions of enhanced quality management for networking local centres can determine strong impacts on local partnerships.

5. Managing learning platforms for tribal population

Upcoming issues have been related to regulatory frameworks, and to innovative financial tools, which can provide a more in depth research analysis for different outcomes. One issue focuses on effectiveness levels of IT tools that brings us back to participatory techniques, which have to capture a specific interest of a number of relevant participants, located at central or in internal parts of divided regions, across districts/counties, cities and villages, which can also be critical for an implemented delivery of information services.

The essential elements of integrative design programs that have been present for the preparation of communitarian educational initiatives have used differentiated languages which have been codified through learning experiences of both women and men. These involved subjects, in a Cambodian's case study, have been receiving community ownerships about the development of vernacular languages in the country. The introduction of social strategies in this Cambodia's case has been run by non-governmental organizations, the International Cooperation for Cambodia (ICC) and Non-Timber Forest Products (NTFP), for participatory training activities directly delivered by community members in cooperation with the national development forest department (Thomas, 2002).

In this situation analysis, it is stressed out that:

[...] from an educational point of view, specialised services need to be designed specific to the needs of the highland communities. Bilingual education appears to be an effective strategy for enabling indigenous communities to access educational services and socio-economic development (Thomas, 2002, p. 3).

The recognition of different societies with a corresponding human core of essential values can particularly lead us to the identification of cultural roles which have been traditionally generated for each communal membership action, within and beyond territorial boundaries.

National interests about the control and ownership of traditional uses of common lands and local resources have challenged endangered environments that have offered spaces for survival claims, which have been expressed by an indigenous world found in peril from modern uses of techno-digital programs. The survival of societies, more in general, causes serious epistemological concern when one need to draw a line across sciences and humanities in order to facilitate a redefinition of concrete logical issues according to different realms of human life (Doebel, 2000). The dependence factor founded on others' life experiences, and in cases of persistent authoritative social forces, plays an important part for what is known and what comes to be accepted for scientific discipline available by intuition to all. Conforming to mediating knowledge factors within tribal societies has marked a redefined path leaving access to transnational linkages through which it can also take place a common expression for information exchanges, and services delivery.

The social factors that can drive indigenous participation toward linked social relations have been present in a progressive empowerment promotion, through which own communities can effectively gain from the adoption of ICTs in different spheres of life. Developmental agencies such as the World Bank, UNESCAP, UNDP, and regional organizations, have also specified the objective variants of knowledge diffusion for implementation and sustainability (Green-Barber, 2010). In substantial instances, the fact of approaching virtual communities through technology communication tools does require circumstantial analysis for an interaction flow of knowledge capacities. With an advanced acquisition of information, the interaction process has implied a compatible understanding for adaptability towards new technological tools which can fit perfectly with local needs or not.

Instead, discriminative elements of social relations that are already embedded into particular traditional structures have determined common value-systems under dominant leaderships, both at the domestic and local level. In fact, it has been highlighted that:

[...] without the use and analysis of data related to important educational issues, firmly rooted in the reality of the local economic environment, local employment opportunities and indigenous cultures, there is no way in which systems and programmes of vocational training and education can be improved, made more relevant and sustainable (Singh, 2001, p. 210).

This inclination towards and effective delivery of ICT services has been supported with national initiatives that have been classified under the (CeCs) community e-centres in rural contexts. For the case of Malaysia, the ESCAP agency has implemented in conjunction with the National Institute of Public Administration (INTAN), ICTs programs for rural communities in (CeCs) for a sustainable IT policy aiming at poverty reduction (ESCAP, 2006).

However, key development results from such IT implementation experiences have produced modest contributions for a continuous availability of assistance to ICTs activities. For instance, the lack of provision of permanent energy supplies, and the presence/absence of personnel for planned job shifts, among others, has offered local motivations for future improvements.

Where a corresponding adoption of communitarian approaches for projects' implementation has meant that common perceptions shared about managerial roles, familial ownerships, and communities' contribution for development, involve overlapping cultural dimensions that in the end can also generate differential impacts about shorter and longer term society's needs and priorities. One of South Asian dimension relates, for example, to gender and equality patterns, which have remained central in innovative information systems, and IK diffusion "[...] information, especially IK-related information, tends to be viewed, perceived and acted upon differently by the different genders" (Pidatala and Khan, 2003). The cultural separation in cross-cutting issues for IK has been a characteristic feature within a learning process that can be adapted in many different ways across societies.

Especially when, direct involvement of policy decisional makers in collaboration with ethnic minorities have already voiced for assistance plans that need to bring to life empowerment IT agendas within national legal frameworks. In 2005, the UN development agency coordinated a type of project that introduced some uses for community radio communications in order to reach larger ethnic populations in Lao PDR under a National Socio-Economic Development Plan (NSEDP), through which:

[...] the project baseline survey established that for a large majority of people in Khoun District, radio was the most important source of information, but few programmes could be received and none of them had any local content (Meier, 2008, p. 30).

Therefore, in content wide contextual terms of aggregated IT initiatives that have been located in South Asian rural/remote zones, with its institutional formulas for problem-solving poverty issues, have also been weak in response in time and space.

Nonetheless, according to specialized domains in countries like India with growing technological investments, the Department of Space (ISRO) has provided an:

Indian National Satellite (INSAT) system and a regular provision of services in the areas of telecommunications, business communication, broadcasting and meteorological services, several initiatives have been taken to expand the application of INSAT to new areas of Telemedicine and Tele-education. [...]. Tele-education, enables non-formal education, strengthens teaching mechanisms, and facilitates interactive training and skill development processes at the Panchayat/village community level, directly (Hegde and Paul, 2007, p. 2).

In such light, a multilateral approach with major stakeholders who have been partnering for the delivery of ICT based services at village level, has directly addressed the rural population in domestic and regional strategic policies that have involved the participation of people coming from civil society organizations, departmental bureaus, and international donors, including the private sectors, in order to provide supporting planning networked based (Hegde and Paul, 2007). This hand in hand process between science and IK has also meant that the existence of multi-purpose projects can potentially facilitate collaboration activities for more sustainable and consistent institutional frameworks, in South Asian areas. Nonetheless, some adverse effects of functional correlated aspects about knowledge systems have been created within foundational aspects that have pertained to different social categories, different logical reasoning, and different ideas about personal and community evolutions, universally accepted to satisfy local needs.

In certain domains, a rigorous contemporary (ethno-centric) approach to education puts more emphasis on the identification of qualitative initiatives that on a small scale

can contribute to modern forms of information transmission, while when possible try to avoid a standardization of traditional and modern activities classified in a variety of different regions, only for practical understandings.

5.1 Sustainable operationalization

A current status of learning theories has been argued for the adaptability of indigenous value-systems and cultural practices within a dynamic process indicating that a static transmission of learning practices can fundamentally perpetrate a passive understanding between learners (Kanstrup-Jensen, 2006). In addition to this, exclusion factors may have a role for causing unequal social reversals, particularly, in the case of development projects that have been addressing education issues in rural contexts. The coming to a solution for vulnerability problems strictly relates to changing processes that concern local/national counterparts within respective circumstances. Which means that a specific composition of groups can have differentiated approaches for developing learning systems, which may meet or may not meet those engaged efforts for poverty reduction that have already been made, because:

[...] the ultimate goal of the process in an indigenous community is to integrate the individual into her/his society. This dichotomy between Western originated paradigms and indigenous epistemology represents a constraint in nurturing capability formation of indigenous communities (Kanstrup-Jensen, 2006, p. 2).

Systematic experiences have included the provision, and the application, of information supporting initiatives to build-up e-Community Centres, that have been put together with a fragmentation of sustainable operationalization. During a regional workshop that was held in 2004 in Indonesia by ESCAP and ADB Institute (ESCAP, 2004), it confirms that the employment of regional resources for ICTs community participatory uses have remained confined at initial stages with set-up trainings and related communication methods. The question about how to share local knowledge in CeCs centres has been critically examined to increase a level of awareness about the formation of organizational structures that recall the attentive work of social development forces put in front and across learning ICTs platforms. A cross-cultural path, with traditional disciplines and a similarity of practices, has also been intertwined with working disciplines that in respect of (IK) have also created some scepticism about a global compatible learning platform that can objectively frame an information society in comparative environments.

The discernible nature through cultural lenses could be embraced in the case of tribal/ethnic traditions already found in philosophical and religious practices, as in India (Raj and Madhok, 2007), which can flourish from new opportunities offered by information and technologies available at all levels. However, in the South East and Pacific region the spread of ICTs tools in both formal and informal environments has mainly meant investing in radio and television technologies while the PCs and internet connectivity have had a limited impact due to weak infrastructures and maintenance costs (Sammelán, 2009). National blueprints that have focused on access, equity, and quality about formal education have followed a strategic increase of participation to render development programmes more inclusive and flexible according to education delivery needs of schools and communities. In which cases, ICTs have been reviewed for the mobilization of social actors involved at different levels with capacity techniques for assessing sectorial demands, and consequentially meeting with

the education, health, food, and financial requirements of a local community. Where, village resources/e-centres have been regularly coordinated according to number of activities, and regional/national conditions.

Sharing knowledge in IT platforms for the promotion of informal and formal education has become a multi-purpose political strategy according to which regional institutions recognizing accountability of community members, with decision-makers, and tribal research centres, need also to manifestly show a continuous support of such type of educational systems, in such cases:

[. . .] proper legal and policy foundations will provide sound organizational infrastructure and binding responsibility of the different actors involved in virtual education, both of which are required to ensure quality and sustainable support to the learner (Kuroda and Shanawez, 2003, p. 568).

Particularly, positive institutional assessments can also be made on more regular basis to directly see the operationalization of education programs that may reveal specific constraints or instead strengths about own performances.

In essence, ICT systems for learning practices and social change are an indication about the fact that enablement processes that have been addressed to indigenous communities can directly affect the relationship between cultural roles and institutional frameworks. In both sides, dual expressive visions have also caused problematic formulations about learning experiences, and separation of legal-political responsibilities taking place in complex cultures.

For this reason, a simple categorization of listing activities about supportive tasks and procedures, resources, tools, and group's interests, still remains a society's challenge for eventual collaborative partnerships that can further grow domestically, as well as, internationally (Zhang, 2010). A knowledge distribution of technology-based learning platforms in different socio-economic contexts enables this connectivity process across indigenous communities that have own oral traditions, and that aspire to the preservation of identity values. Opening new windows for the purpose of diminishing exclusion factors about gender inequality and marginalization of indigenous groups, it also means to work out cultural and linguistic capabilities for current forms of interventions by contributing, for example, to an ancestral oral transmission of knowledge among local participant communities compatibly put in a position to decide specific cognitive approaches to education for all (Mishra, 2009).

Therefore, experimental education and training models having been designed for the implementation of information technology programs at community level, have also formed internal and external linkages for collaboration practices, among different players. Together with governmental actors, international aid agencies, civil organizations based at country level, they can assess and manage the development of societies. Also in association with individual actions that have been concurrently establishing practical solutions to connect social systems by mainly relying on community organizations for projects' implementation. Bringing innovation with inclusive methods is a cultural puzzling condition that has potentially been questioned a number of times for the deep impact about innovative programs addressed to Indigenous people in a positive affirmation of cultural living paths (Aldous *et al.*, 2008).

However, the conceptualization of new models for IT communication systems in development relies on aggregated variables that initially help to better define this

changing relationship between projectual aims and effective social practices that still depend on socio-economic, and legal configurations, but locally adapted.

For the amount of increasing knowledge, and opportunities coming out from communications initiatives, with involved trainers, learners, and direct community recipients, the existing frameworks can be also extended to produce changing attitudes, and action-driven decisions for the integration of IT resources, with empowerment of new skills, eventually filling a lack of mediated/institutionalized knowledge nationwide (Heeks and Molla, 2009). Specific uses of education-learning programs, in Asia and the Pacific, for the benefit of involved groups in ICTs have been part of a collective changing process that will also need to establish a connection of related initiatives with coherent mechanisms possibly by bringing harmonized practices, and by working for improvements with contiguous implications, for further practical explorations.

6. Conclusion

In summary, despite the widespread diffusion of technology communication in changing global contexts, there has been a propensity for differentiated assimilation in the Asian and Pacific region that is becoming more exposed to sustainability problems and environmental impacts. The search for a global solution to poverty driven by major governmental and civil development agencies has led to a common identification of educational IT instruments delivered across rural communities. However, the applicability of adaptive technologies and adopted participatory methodologies has provided systematic challenges, especially in the way of managing this process towards indigenous people, and in creating responsiveness capacity levels for shared information.

For many countries, particularly in South and South-eastern Asia, coming to terms with technological innovation has been increasingly functional to the environmental conditions of rural/remote communities who have significantly relied on external means for supportive learning practices in stable locations. Opening national markets to the redistribution of national resources and knowledge has also determined a development of ICTs uses in many spheres of life to everyone. However, in contingent expectations, many implementing actors across this region have put lots of effort to strengthen social and economic relations at the grassroots level.

This analytical review has shown the development interventions that have contributed to the uses of mass communication tools for indigenous residents. With rights-based approaches that have been concurrently adapted to invest in dialoguing forms of interaction with multiple stakeholders, for participation and cooperation. Nonetheless, ICT interventions that have directly bridged a gap in knowledge across territories have had diverse impacts on common practices and standardized conceptualization for information acquisition. The functioning of traditional societies remains crucial to an empowerment process that can be strategized globally, but that it also needs to be effective locally. In villages, according to rural/mountainous settings, tribal populations have utilized developmental options through a validation process that leaves open several dilemmas about data collection, learning platforms provision, performance criteria, and others.

In the very essence, this theoretical contribution draws attention about the fact that changing societal rules, and traditional cultural transmission, constitute an essential part of Asian countries to explicitly open to effective and productive transitions in technology and development. In other words, “the rights-based approach recognizes

that sensitivity to indigenous cultures and languages and respect for their knowledge systems are important to build/strengthen ownership, and hence sustainability of development initiatives." (IFAD, 2003, p. 3).

Nonetheless, a generic lack of appropriate management systems for monitoring and evaluation functions that cannot serve communities in all types of situation, has also created complex patterns of overlapping initiatives (e.g. development aid agencies) towards the integration of ICTs that have had a difficult adaptation in South-east Asian areas. In multiethnic territories, movements of indigenous/local groups also relate to constitutional systems that have control on national resources, with a fragmentation of social settings that basically have caused struggling social determinants, with unequal distribution patterns about national resources, or cultural preservation (Langton *et al.*, 2005).

In this sense, the engagement of local governments and indigenous groups to ICT initiatives has worked to the extent that their involvement has gradually been chosen for poverty reduction. Some constraining factors about information systems, and policy impacts, have been seen from common perceptions and attitudes about multiple actors' presence, based on asymmetric information, delays of structural delivery of targeted programs, and unbalanced power relations (UNDP, evaluation office 2003).

Finally, a specialised research focus needs to be given to participatory rural appraisal for communities' cognitive knowledge and techniques for development that can specify reciprocal interests for rural skills, and acquisition of learning tools. Also for the purpose of increasing a deeper understanding on IT management systems in rural/remote settings, for day-to day activities, performed both by men and women, with changing implications for involved subjects.

Therefore, we suggest that more research actually documenting rapid learning transfers, taking place with interactive Information and Technology characteristics, in Asia and beyond, would represent a new explicative exploration to enhance our learning.

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