

Making the most of community infrastructure in developing communities: an application of the LCM Achievement Model (Hughes 2007)

Dr Lewis Hughes, Director Enviro-sys and Honorary Fellow Deakin University
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A word of introduction

With supporting developing communities as the focus, the proposition is offered-

The relationship between communities strengthening and best use of the available infrastructure has much in common with the relationship between organisations achieving through best use of what people know and can do.

In both instances, achievement goals (the sweet spot in Figure 1) are pursued as a consequence of people drawing upon the outcomes of their lifelong learning in accord with their motivations to personally achieve in a way which is consistent with community and/or organisational achievement. Also, this is greatly assisted by the support of an environment which nurtures lifelong learning and drawing upon it.

As this is a paper directed at strengthening community achievement through having and making best use of infrastructure, I offer the following anecdote from my experience in contributing to the upgrading of water, wastewater, and electric power infrastructure available to a remote community reliant upon government funding – not sustainable. The intent –as I saw it¹ - was that, consequent upon enhanced available infrastructure, there was the prospect of individual and group motivations emerging to achieve a greater level of community sustainability than would otherwise be the case. For example, health would improve, small scale enterprises would emerge, and hope-for-the-future would replace apathy.

Fred (pseudonym), a retired civil engineer was recruited back to the role of combined site engineer and trainer –extending over a twelve month period. Fred had daily authority with respect to project progress; and this included training members of the community recruited as the construction crew. Importantly, the skills transfer to the community was critical to on-going operation and maintenance; and, hence, the community sustainability objective.

A partnership evolved in which mutual regard led to Fred looking after the trainees in a technical sense and the trainees looking after Fred in terms of community inclusion. An aspect of this was Fred going only so far in insisting on quality (e.g. manner of joining/supporting bends in potable water delivery pipes) and then, when things failed no matter what time of day or night or weather circumstances, requiring the crew to rectify the problem so as to head-off the anger of the community when services were not available to them. This was not a conventional approach to training, but it worked well in these circumstances of immediate consequences. There was a lot of self-discovery for the crew in this process and expanding respect for others as they co-operatively added to individual and group capability (the “L” in Figure 1). Fred was highly effective in nurturing a learning

¹ My vision was somewhat beyond the funded engineering scope of the project. In essence, the engineering scope was to put in place upgraded infrastructure along with some skills-transfer to the community. With the benefit of hindsight, the project would have been strengthened (expanded outcomes) by overtly including community goals – as inherent in application of the LCM Achievement Model (Hughes 2007) in pursuit of the expectations.

environment (the “C” in Figure 1), and there were newly evolving individual and group motivations to contribute coupled to acquiring new status within the community and looking to new personal horizons (the “M” in Figure 1). However, with the benefit of hindsight, the larger community (beyond the crew) were overlooked in terms of inclusion in ownership and what this meant for making best use of the infrastructure – the movement toward sustainability was not as strong as hoped.

The lesson – Look beyond the immediacy of an infrastructure project to the on-going, deeply felt, ownership of the community to be served. If I had the time over again, I would seek to include the community, in some way, as Fred’s crew – i.e. Not just something being done for them, but something in which they had ownership. In essence, ‘best-use’ of the asset being actively nurtured from the beginning – even before turning of the first sod.

Of course, in circumstances where the up-front ownership has not been the case, not all is lost. I would welcome the opportunity to return to this community and work with them in asserting ownership with making best use of the infrastructure as the focus – i.e. specifying this as the **sweet spot** in Figure 1.

Prompted by the foregoing and other instances of infrastructure (and the like²) not being used to best advantage in developing communities and related experience of the author, the utility of the LCM Achievement Model (Hughes 2007)³ is offered for consideration. Accordingly, Figure 1 is a generic representation of the model as emerged in the course of exploring the relationship between organisational achievement and outcomes from lifelong learning; and subsequently confirmed as having broad utility. Note: For the purposes of this paper, the sweet spot should be thought of as community making best use of infrastructure.

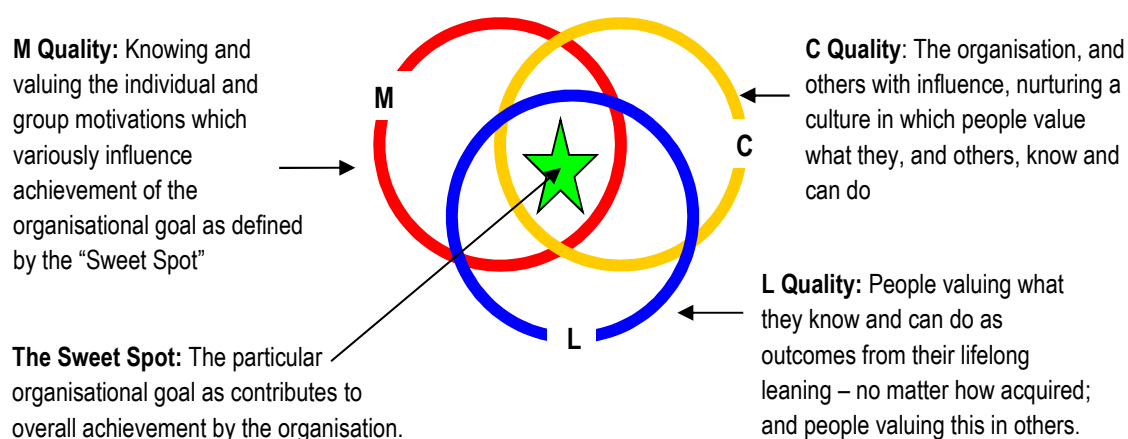


Figure 1: LCM Achievement Model (Hughes 2007) – A generic representation

Grounded in the logic that organisations achieve through the efforts of their people, the LCM Achievement Model (Hughes 2007) emerged during 3 years of literature review and ethnographic research. The research question being - **What aids and what inhibits the outcomes from lifelong learning being applied to organisational achievement?** This research focused upon the water industry, contract cleaning, and the Country Fire Authority of Victoria (CFA). It should be noted that,

² A particular case, is in mind, of a residence on a rural property being used as accommodation for men with substance abuse issues, but the property (farm land) being only marginally utilised..

³ Hughes, L. (2007), **Applying outcomes of lifelong learning to organisational achievement**, PhD thesis, Deakin University, Geelong <http://dro.deakin.edu.au/eserv/DU:30023293/hughes-applyingoutcomes-2007.pdf> - downloaded 1/04/2015

whilst the water industry and contract cleaning were significant in triangulating expansion of the research, the CFA was the major arena of exploration and was especially focused upon retaining volunteers (approximately 50,000) as a critical element of community safety. The insights arising, included -

- the significance of water industry agencies, authorities and consulting engineers recognising and valuing the outcomes of the lifelong learning of their staff – ranging across the spectrum of professionally qualified through technical operators to general staff. Similarly, staff (across the spectrum) knowing and valuing what they personally know and can do; and valuing this in others with whom they work and otherwise interact.
- the significance of contract cleaning enterprises recognising and valuing the outcomes of the lifelong learning of their staff who frequently work with minimum supervision. Similarly, staff – new and experienced – valuing themselves and others in terms of what they know and can do – i.e. valuing themselves (and other colleagues) as lifelong learners in a manner which strengthens self-image, contributes to the achievement of employer goals, and is aligned to the expectations of clients.
- The significance of the Country Fire Authority of Victoria (CFA) being seen to recognise and value the diversity of what individual volunteers know and can do - i.e. what a volunteer brings to their volunteering and what they acquire from volunteering. Similarly, volunteers valuing not only themselves in terms of their capabilities but also valuing other members of, what they see, as the CFA family.

It should be noted that, as in the other research environments, moving implicit valuing to explicit valuing of what people know and can do is a significant factor in encouraging and drawing upon the outcomes of lifelong learning. This applies to individuals, groups and organisations. In the course of the research, there were numerous incidences of people helping others to recognise and act upon what they know and can do when it was hitherto invisible to the person. In this respect, leadership – both formal and informal – is the foundation upon which achieving through nurturing and drawing upon what people know and can do rests. See Hughes (2007, p.239) for a representation of the LCM Achievement Model as a tool applied to hinged⁴ *volunteer & brigade* interacting activity systems with leadership as the foundation domain.

Extrapolating from organisation achievement to community best use of infrastructure

As offered at the beginning of this paper, I hold that there is much commonality in an organisation achieving and a community achieving. Both are constructs of people, both have much reliance on social cohesion, social cohesion is grounded in mutual respect, and making best use of the outcomes from lifelong learning is an element of mutual respect. Accordingly, the LCM Achievement Model (Hughes 2007) is offered as a tool with utility in achieving community productivity.

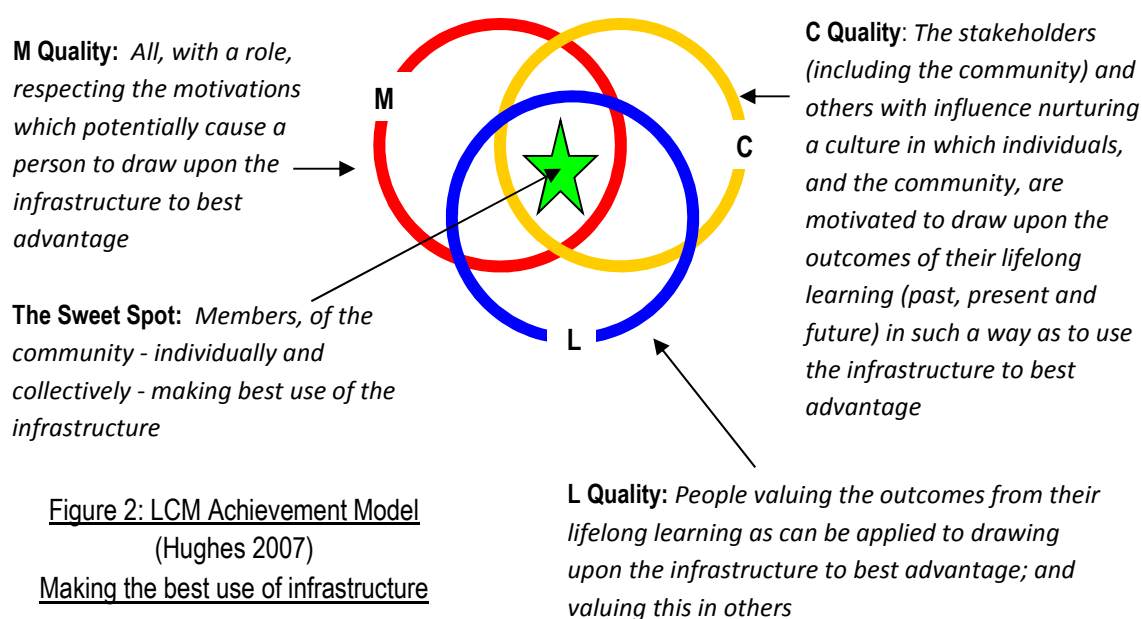
A word about “community productivity” – In recent years, my wife Libby (now deceased) and I have explored the relationship between vocational education and training (when well taught) adding to social capital (for example, Hughes and Hughes (2013)). In the course of this research, we have come to the view that social capital and economic productivity are intimately linked – thus giving rise to a proposition that there is merit in embracing the

⁴ See later discussion – page 5. Also, *Expanding Utility of Activity Theory* (Hughes 2015) is forthcoming.

notion of social productivity. For us, social productivity implies pride-in-self and respect for others as the glue of social cohesion. In turn, social cohesion is the foundation upon which a community builds “productivity” of an entwined social and economic character. Further, this requires community sustaining infrastructure as is the focus of this paper.

In this making best use of infrastructure case, I suggest that the **Sweet Spot** is defined as **Members, of the community - individually and collectively - making best use of the infrastructure** (Figure 2). With this as the goal -

- The “L” quality can be expressed as - **People valuing the outcomes from their lifelong learning as can be applied to drawing upon the infrastructure to best advantage; and valuing this in others.**
- The “C” quality can be expressed as – **The stakeholders (including the community) and others with influence nurturing a culture in which individuals, and the community, are motivated to draw upon the outcomes of their lifelong learning (past, present and future) in such a way as to use the infrastructure to best advantage.**
- The “M” quality can be expressed as – **All, with a role, respecting the motivations which potentially cause a person to draw upon the infrastructure to best advantage.**



Further to the above, and given the utility of placing the LCM Achievement Model (Hughes 2007) as a tool/artifact in an activity system constructed in accord with Cultural Historical Activity Theory (CHAT)⁵, Figure 3 is a generic representation of an activity system. Note: The arrows indicate connection between the elements and the prospect of tensions between the elements.

⁵For readers who are new to the concept of Activity Theory, the example of primitive hunters has been used as an illustration (Leont’ev 1981). In this example, the hunters are the subject and the animal (quarry) is the object being hunted for survival purposes. There is a division of labour in which some of the hunters chase the animal up a gully and toward others who will throw rocks (the tool) down upon the animal. There are rules as to who plays what role and how the products of the animal are distributed within the totality of the community of the tribe. What might happen if a rifle became available? Or what might happen if there were other changes within the network – e.g. the community of the tribe was weakened through ill-health affecting mostly those who traditionally were the hunters.

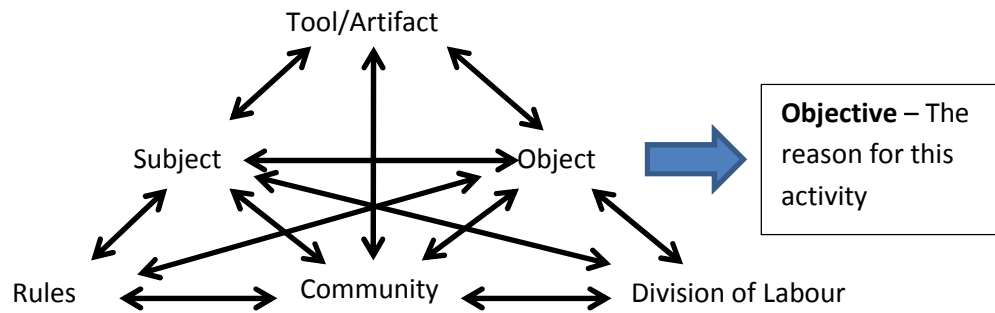


Figure 2: Activity System – Generic representation of CHAT

Most generally, a circumstance of activity is best represented by interacting activity systems. For example, in the case of making best use of infrastructure, there is the activity of an individual using it, there is also the expanded use of the community using it, and amongst the probable more numerous entities with an interest there are the people and organisations maintaining the infrastructure, government who may have funded the infrastructure, and interested parties who may have environmental concerns regarding the infrastructure, etc. Figure 3 is a representation of interacting activity systems where there is some commonality of objective and/or conflict (See, Engestrom 1999).

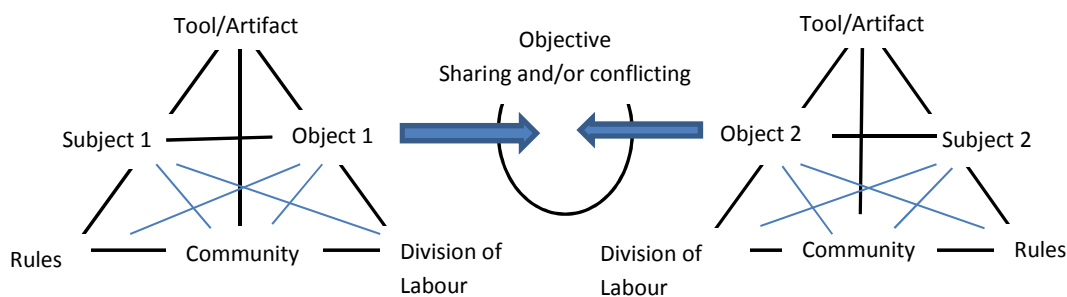


Figure 3: Interacting Activity Systems – Generic representation

As an evolution from the above, the development of the LCM Achievement Model (Hughes 2007) was coupled with abutting interacting activity systems in a **hinged** form along an axis of the model (as a component of tool/artifact); shared and/or conflicting objective; and chosen rules, community or division of labour (See Hughes 2007 p. 239). The effect of this being to generate and support conversation leading to strengthened ownership of mutually agreed component(s) of the objective (Hughes 2015) whilst acknowledging other objectives which might variously exist.

A specific approach to best use of wastewater infrastructure – offered as an example of ‘best use’ of infrastructure

Cognisant that international aid funding identities have identified the desirability of developing the capacity of local stakeholders and increasing awareness of sanitation service customers, Figure 4 is indicative of an activity system with making best use of wastewater infrastructure as the focus.

For the purposes of this paper, with respect to wastewater, I am addressing this overview to the individual user as the subject. However, some comment is made regarding interactions which may occur. In this instance –

- **The subject** is the potential user (they may or may not be initially inclined to draw upon the wastewater infrastructure) as an individual. However, there are other parties for whom interacting activity systems apply and, necessarily, require exploration and attention - e.g. funding authority, local health authority, those with environmental concerns, etc.
- **The object** is using the wastewater infrastructure to best advantage. Necessarily, this requires recognition of the interests of other parties and seeking accommodation between the parties – accordingly, consideration of interacting activity systems is helpful.
- **The objective** (the overall goal in the interests of all parties) is community strengthening through economic and social channels. Clearly, requiring attention to interacting activity systems; and probably including enhanced environmental outcomes.
- **The rules** govern drawing upon the wastewater infrastructure; and some of which may be assisting and/or hindering. Rules which inhibit one party may well be an aid to another of the parties with interacting activity systems; and thus gives rise to the importance of finding agreement, or acceptance, within the shared objective.
- **The community** may be primarily local, but may reach beyond as benefitting and/or disadvantaged parties. Maybe, ‘community’ is at the heart of best use of wastewater; and exploration of interacting activity systems with this focus – at the hinge - merits attention.
- **The division of labour** is as can be drawn upon in direct support of the individual seeking to make best use of the wastewater infrastructure. For example, this may involve neighbours in co-operation to economic and/or social advantage, educators/trainers, health authorities, family members, etc. – all of whom have their own shaping interacting activity systems. **Who can do what to assist?**

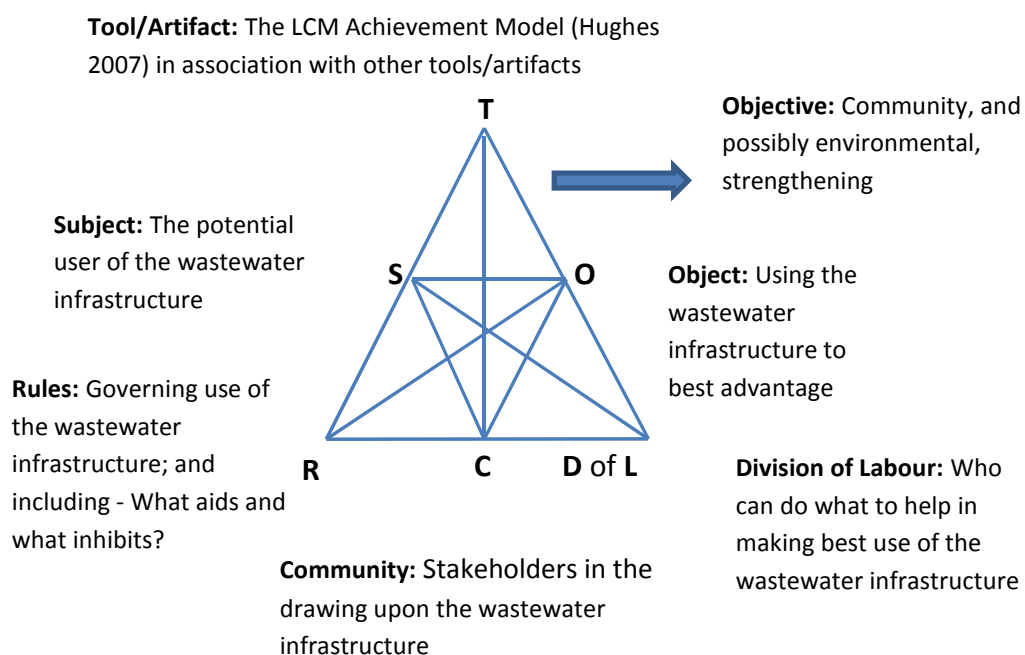


Figure 5 – Activity system for an individual making best use of available wastewater infrastructure

Where to from here

This synopsis of a proposition, to draw upon the LCM Achievement Model (Hughes 2007) as a mediating tool/artifact in an activity system, is offered for consideration as an approach to integrating constructed facilities with community valuing- ownership; and, hence, utilisation as intended. This approach having application across the spectrum of scoping research, shaping consultation, engaging stakeholders in conversation leading to ownership and commitment, reviewing progress and monitoring utilization; and more according to strengthening community opportunities .

Whilst the particularity of drawing upon wastewater infrastructure has been addressed – albeit in overview – there is broader utility on offer as exemplified in the following anecdote of “*Could have done better*” if the approach outlined here was in mind and adopted.

An anecdote from the author’s experience - Whilst looking at an Indigenous community’s housing stock with a view to maintenance and/or replacement as required due to willful damage, I was called out to by a short distance away group of people – “*Hey Whitey, what are you doing here?*”. This was somewhat threatening as alcohol was clearly involved and there was a degree of aggression in the question. Notwithstanding some nervousness, I did join the group and explained my presence. In response, it was explained to me that the damage (in some instances requiring demolition and re-building) was a consequence of the young people in the community having lost their way coupled with deterioration of self-pride by the men (not all, but some). And there was also the remark that their own people in authority, but located away from the community, appeared disinterested.

I walked away from this conversation, reflecting upon the clarity of the heart-felt articulation of the issue and my initial inclination to keep walking so as to avoid confrontation. My sense was of much to be gained by restoring respect for, and within, the community – remedial construction without valued ownership was not an abiding solution.

The above anecdote is not a profound new insight; however, it is a device to remind that inclusion of a community in setting objectives, the development process, using to best advantage, and maintaining infrastructure is at the core of a sustainable and fruitful future. Whilst this is tacitly known, it is vulnerable to slipping-from-mind and there is merit in having in place a strategy to keep-it-in-mind.

I acknowledge that I am not bringing new intention to the issue. However, my experience is such that it can be the case that having a tool to act upon what is intended is very helpful – the absence of a tool can lead to good intention not being acted upon. Accordingly, I trust that this offering serves to make explicit a process which assists in ***making best use of infrastructure*** which otherwise is vulnerable to being implicitly valued but not overtly acted upon.

I offer this paper as a contribution to conversation regarding ‘best use’ of infrastructure. However, should the opportunity arise, the opportunity to expand upon this paper in a sharing with colleagues manner would be very welcomed. This said, I conclude by drawing attention to the cultural, and social constructs, inclusiveness of CHAT and the LCM Achievement Model (Hughes 2007)

Lewis Hughes

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About the author

Dr Lewis Hughes is a Director of Enviro-sys, a consultancy focused upon '*Sustainability through nurturing and making best use of knowledge*'. From a background in mathematics and science teaching and subsequent diverse industry roles, Lewis is intent upon increasing the valuing of lifelong learning as a pathway to community strengthening and social cohesion – as is applicable within the diversity of cultures, and the like, which are at the core of the richness of our global community.

Lewis has an appointment as Honorary Fellow at Deakin University. He highly values this association and acknowledges the role played by Deakin in supporting his PhD candidacy leading to the emergence of the LCM Achievement Model (Hughes 2007) and flows (albeit some years down the track) from his PhD (Deakin University, 2008) candidacy which was focused upon the relationship between lifelong learning and organisational achievement.

In addition to his broad professional background, including 27 years membership of the Australian Water Association, he has a long engagement with vocational education and training (VET) – particularly with respect to quality assurance. Lewis is presently an Executive Committee Member of the VISTA Association of VET Professionals. Lewis is also a past National President, and Life Member, of the Australian Institute of Training and Development.

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