

## Commentary on:

# Coherent Social Systems for Learning: An Approach for Contextualized and Community-Centred Metadata

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Heidrun Allert's paper is, at least for this reader, a very interesting contribution to the debate over the future of the semantic web from an educational perspective.

While the core of the argument is that trying to treat learning objects in a decontextualised manner is a serious mistake, there is a parallel view that all that is needed for teaching is to stitch Learning Objects together in some simple manner. Earle (2001), for example, cautions against this view.

The main contribution is a proposal for a new form of metadata relating to the notion of a "Learning Role" which is used to provide a way of avoiding the static nature of many schemes for describing ontological structures. This is a constructive approach to a somewhat difficult situation in the world of educational metadata. At the very least, the proposal deserves to be fleshed out into a more substantial proposal and discussed by various interested parties.

First I want to understand the core proposal relating to Learning Roles rather than getting involved in the discussion about educational philosophy. The main proposal found in the paper argues for various educational resources to be associated with "Learning Roles" – and here, educational resources include people as well as technical and informational resources.

If the notion of Learning Role furthers the debate then we need to understand the core idea as it might be expressed within a metadata scheme. What I find difficult to understand from the description is the meaning of the term "meta role". In the paper, Heidrun Allert describes Learning Roles as meta-roles that specify roles, interactions between roles, and qualities/properties a type must meet in order to be able to fill a role. Now this seems like a powerful idea that does not suffer from the same difficulties as the notion of Learning Object but what would an example of a Learning Role look like in some formal definitional sense? For example, what might such a Learning Role look like as metadata? Having such an example or definition might help this reader clarify the concept of "Learning Role".

As an example of how clarity might help, in Figure 5, we have “knowledge creation learning” as a Learning Role. Where does that leave the notion of “peripheral participant” from level M1? Is “peripheral participant” a Learning Role? If not, what is its type? Presumably not that of Learning Role – unless Learning Roles are defined recursively. I don’t find a clear answer to this question in the paper but I do believe that currently the notion of Learning Role is described in ambiguous terms - for example,

“an object potentially fills different Learning Roles. For example a person can fill the role *Community Coordinator* within a specific Community of Practice while it fills the role Problem Solver in a problem solving team”.

So is the role of a “Community Coordinator” a Learning Role or not? If this is so it really does look like the notion of Learning Role has a recursive flavour.

Going back to the statement “meta-roles which specify roles, interactions between roles, and qualities/properties a type must meet in order to be able to fill a role”, how might these interactions between roles be defined? There seems to be little about this in the paper but perhaps these interactions themselves are determined by the underlying educational philosophy. If these interactions can be defined in very general terms, good. If not, we will have some extra difficulties – for example, in comparing descriptions. I would like to know in what direction Heidrun Allert wants to take these proposals.

In a recent project that sought to build a content management system (“An Educational Content Management System for the Support of eLearning across Europe” eCMS), the experience of seeking to define metadata for educational usage has made me aware of one major problem faced by designers of working systems. That is, to make sure that all the key players in the system’s deployment can take advantage of the metadata in ways that makes their tasks easier to complete. This stresses the roles of users of metadata as being primary - rather than the metadata schemes themselves. Even so, we know there are some critical dependencies between the user’s role and the metadata scheme being used.

This observation seems to fit well with the problem of describing Learning Roles in that different Communities of Practice (CoP) amongst the various users may seek metadata defined in terms congenial to their own needs – so any metadata scheme capable of providing support for objects to have multiple Learning Roles is also going in the right direction.

However, this observation also complicates Heidrun Allert’s analysis a little since the paper emphasises more the relationship between students and teachers – or, in CoP terms, the paper stresses the need to reflect the Learning Roles constructed by a single CoP. In practice there are

several CoPs all (potentially) 'fighting over' any given metadata scheme. In the eCMS project, we examined four basic user groups that can be analysed in terms of a number of identifiable CoPs – though we reached the number four by conflating two potential roles (course leader and course lecturer). The user groups were:

- Learners -- finding and using educational materials
- Course Developers -- wishing to publish materials
- Course Managers<sup>1</sup> -- those who are responsible for the smooth running of a course
- System Administrators -- implementing and managing the system

Though mapping these groups to CoPs is not so simple. For example, learners and teachers/lecturers may form a CoP as well as course developers and course managers. If the argument from Heidrun Allert has any force in relation to the ways in which educational metadata is not pedagogically neutral then we are likely to have some practical difficulties defining schemes for the various CoPs that work with our metadata scheme. Each of the CoPs may have quite distinct educational perspectives about the material.

The notion of "Community of Practice" is a powerful one, encouraging a strong emphasis on the ways in which social relationships and practices can be regarded as the repository of "knowledge" – and this paper makes a cogent case for the benefits of seeing knowledge in broadly a social constructivist framework. Heidrun Allert's openness to accept that different communities will see things differently also fits in with my more practically oriented comments above.

The situation described above also fits in with the aim of allowing diversity – rather than fighting a battle for the truth. We are being asked to maintain that there are many ways of looking at learning, and that the metadata designer needs to take this into account. Since I find the argument in the paper persuasive that the assumption of neutrality is not useful, we are left with a somewhat postmodern view<sup>2</sup> – that we need many ways of examining situations. It is slightly ironic that the educational semantic web community may be following a path similar to that described by Perry (1970) on the development of students in higher education!

Having reached the position that Learning Roles may help us avoid the problem of the semantics of Learning Objects being dependent on context then we may want some answers to two further questions. For example, when describing the content of a Learning Object will this

<sup>1</sup> Note that Course Developers and Course Managers may also be teachers who run the online courses

<sup>2</sup> Warts and all

textual description (e.g. DC.Description) also depend on the educational philosophy? Perhaps this has been discussed in the design of EML (see for example, Koper and Manderveld, 2004) but are we going to ignore this issue in the hope that this will not have any impact on the utility of the proposed scheme? Another question that may turn out to be trivial is whether or not the Learning Roles selected turn out to be conditioned by the context in some way. We might anticipate that this is likely but, again, it is not clear that the consequences would be too unpleasant.

Moving to a few low level questions, one general observation perhaps worth making is that occasionally a false dichotomy is introduced – perhaps for rhetorical reasons. For example, the notion that learning is either “shared” or “individual”. When viewing the world in terms of shared learning then we still have to account for what the individual thinks when alone. When viewing the world as composed of individual learners then we have to account for social effects. It is not an “either/or” but perhaps the search for a satisfactory synthesis.

The description of situated learning in terms of legitimate peripheral participation introduces a spatial metaphor to denote closeness to “full membership” so that peripheral participation is in some sense less than membership – and yet, it is possible for CoPs to be fairly “flat” as well as to be highly hierarchical. Hence the notion of full membership seems to be biased towards a hierarchical view of CoPs.

While understanding knowledge in terms of something that resides in the head that can be externalised on demand is understood as a fairly simplistic account of learning, so seeing knowledge as somehow residing in the interplay of people is also not entirely convincing. Symbolic processes and the world itself are around and people interact with the world even when others are not around. Maybe no knowledge is created but sometimes perhaps it is. Following Bakhtin (see e.g. Todorov, 1985) each person can be thought of as conducting a rather slippery conversation with themselves so that even without talking with another, amazing transformations in meaning come to pass. Any account of learning that underplays the role of the individual’s own path in life, the social communities in which the individual finds themselves and the realities associated with playing with the stuff of the universe and the linguistic devices available to most of us is going – ultimately – to be a disappointment. This positions me close to that of Stahl who, as Heidrun Allert states, “integrates the idea of a dynamic relationship: He assumes a dynamic relationship between shared meanings and individual interpretations”. So how does knowing this influence the educational metadata situation?

Heidrun Allert’s position is seen by me to be one of accommodation rather than the argument for one preferred view. The admission of the bias in existing attempts to be pedagogically neutral is sound enough and the suggestions for managing this bias are reasonable.

In real life, the use of roles is not always so simple. Heidrun Allert states that Bereiter and Scardamalia suggest that there are no clear cut roles in learning communities. Again, there is a tension to see the situation either in terms of nicely formalisable roles or in terms of a highly fluid and dynamic situation in which roles blur and change from context to context. Heidrun Allert argues for dynamic role allocation but the proposal only goes far enough to suggest it is possible.

I think it must be clear by now that I feel Heidrun Allert also provides a very good summary of the problems with the currently popular notion of “Learning Objects”. Specifically, the argument seems well made in relation to the difficulty of ascribing a semantics to a Learning Object. The need to take the context into account seems self evidence to some (including myself) but those that resist such a point of view need the additional understanding that shared meaning is a far more elusive goal than they might imagine. Of course, there are people who find it hard to hear what people say. The meaning one person ascribes via metadata might be missed by someone who thinks they understand the semantics in a particular way – even when they come from the same Community of Practice!

## References

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