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# **Contributing to a Learning Methodology for Web 2.0 Learning – Identifying Central Tensions in Educational Use of web 2.0 Technologies**

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## **Abstract**

This paper contributes to the development of a methodology for designing Web 2.0 mediated learning based on a PBL approach. It does so by identifying tensions in the cross field between learning and Web 2.0. To establish an overview we begin by defining the intersections between learning and Web 2.0. In relation to this, and with reference to (Ryberg, Glud, Buus, & Georgsen, 2010), we argue that a problem-based approach to learning fits well with the characteristics of Web 2.0 activities. Moreover, we argue that the connection between Web 2.0 and learning gives rise to an overarching tension between who controls the networked learning environment and processes: the teacher or the learner? We propose a conceptual model where this tension can be understood as expressible across at least four dimensions: *the learning process, the motivation, the infrastructure, and resources/content*. Also we identify a number of crucial questions that need to be considered in relation to each of these dimensions when designing for web 2.0 mediated learning. These questions and tensions are what we explore in this paper as they contribute to the development of a learning methodology and some mediating design artefacts, which we further discuss in (Buus, Georgsen, Ryberg, Glud, & Davidsen, 2010). The intention of the conceptual model and questions is to prompt practitioners to discuss and critically reflect on their course designs during the planning and design phase. Furthermore, we discuss some additional mediating design artefacts, which we are developing to support practitioners' design of Web 2.0 oriented learning. These are descriptions of existing practices and activities which will be uploaded in the wiki-based social community Methopedia.

## **Keywords**

Web 2.0 mediated learning, Problem-based learning, VLE, PLE, tensions, learning values, CoED

## **Web 2.0 Mediated Learning**

As our point of departure we begin by defining Web 2.0 and learning in order to identify the cross field between the two. In a recent BECTA report Crook et al. (2008) mention different reasons why Web 2.0 technologies could potentially benefit current teaching practices. Firstly, young people are already using Web 2.0 technologies. Secondly, Web 2.0 activities are understood to be important from a learning theoretical perspective (Crook et al., 2008, p. 29). Particularly qualities such as the centrality of participation, production, dialogue, and collaboration make them ideal to actively engage learners individually as well as collaboratively. Thirdly, there is a match between current policy and curriculum goals where terms such as enterprise 2.0 reflects that Web 2.0 technologies are also important in the modern economy (Crook et al., 2008, p. 72). Finally, the user-centered focus of Web 2.0 activities supports the users in creating and maintaining connections between formal as well as informal learning arenas (Dohn, 2009, p. 344).

While a multitude of partly overlapping definitions of web 2.0 exist we have identified two more overarching perspectives or ways of understanding web 2.0, and the way it has been practiced e.g. Anderson defines Web 2.0 as:

(...) a group of technologies which have become deeply associated with the term: blogs, wikis, podcasts, RSS feeds etc., which facilitate a more socially connected Web where everyone is able to add to and edit the information space. (Anderson, 2007, p. 5)

From this definition Web 2.0 is understood as a set of technologies, but also as a range of activities with certain characteristics. In this way we can distinguish between Web 2.0 *technologies* or *resources* as e.g. blogs, microblogs and podcasts and then Web 2.0 *activities* or practices such as blogging, podcasting, and micro-blogging. This distinction has been further explored by Web 2.0 Dohn (2009) who has defined web 2.0 as a range of activities or practices, rather than technologies, which she characterises in the following way (Dohn, 2009, p. 345):

1. collaboration and/or distributed authorship
2. active, open-access, "bottom-up" participation and interactive multi-way communication
3. continuous production, reproduction, and transformation of material in use and reuse across contexts
4. openness of content, renunciation of copyright, distributed ownership
5. lack of finality, "awareness in practice" of the "open-endedness" of the activity
6. taking place on WWW, or to a large extent utilizing Web-mediated resources and activities

With the distinction between technology and activity we also want to emphasise that using e.g. a blog as a *technology* or *resource* in teaching does not necessarily make it a web 2.0 *activity*. Rather this involves engagement with the practices or values mentioned above, and thus entails more than merely employing a particular technology. However, we agree with Dohn that 'a web 2.0 activity' is a matter of degree, meaning that an activity does not have to be characterized by all of the bullet-points on the list above (except the last one which Dohn argues is a necessary condition (Dohn, 2009, p. 345)).

Overall, one might say that the shift from Web 1.0 to Web 2.0 within an educational context can be characterized as a shift in participant control in relation to different aspects of the learning activities. Within learning research there seems to have been a gradual move from what we could call learning 1.0 seen as a more traditional curriculum-based approach towards learning 2.0 as a more problem-based approach to learning (although it should be noted that actual pedagogical practice or institutionalised education has not necessarily changed to the same degree). Conole (2007) identifies this transition as part of three broader shifts, which are related to an emerging interest in the social potentials of technologies, partly due to the emergence of web 2.0 technologies:

In essence, this suggests that there are three fundamental shifts: a shift from a focus on information to communication, a shift from a passive to more interactive engagement, and a shift from a focus on individual learners to more socially situative learning. (Conole, 2007, p. 82)

Curriculum based strategies, normally designated as *teaching*, aim at providing the student with a relatively fixed amount of agreed upon knowledge, and with a focus on content, teacher control and instruction. Problem-based strategies, normally designated as *learning*, on the other hand aim at providing the student with abilities to acquire knowledge appropriate to problem solving. In Problem-Based Learning (PBL) the focus is on participant control (Bygholm & Buus, 2009), which also means that a transition from curriculum-based teaching to PBL entails a movement from a teacher-centered approach to a learner-centered approach (Jones & Dirckinck-Holmfeld, 2009; Ryberg, Koottatep, Pengchai, & Dirckinck-Holmfeld, 2006). This move can in many ways be compared to the conceptual move from web 1.0 to web 2.0 which by some is seen as a transition from 'users/learners as consumers' towards 'users/learners as producers' (Redecker, 2009). Consequently, it makes good sense to connect Web 2.0 with a problem-based approach to learning as also suggested in (Dohn, 2009; Ryberg et al., 2010).

### Identifying Tensions in Educational Adoption of Web 2.0

In recent literature on web 2.0 within educational contexts, an increasingly important issue seems to be the tensions between teacher or student control. For example Crook et al. (2008) sum up this tension in the questions: who controls the learning experience? And how is this control managed? (Crook et al., 2008, pp. 34-46). The aspects of control are related both to the networked learning environments and learning processes. In relation to the former this tension has particularly been explored through discussions of whether to use *Virtual Learning Environments* (VLEs) (often managed by the teacher/institution) or to adopt a more personal or individualized approach to learning in the shape of *Personal Learning Environments* (PLEs) where the learner customizes his or her own learning environment (Conole, de Laat, Dillon, & Darby, 2008). In a VLE, it has been argued, the teacher organizes the tools and structures the dialogue (Crook et al., 2008, p. 36), whereas a PLE is aimed at supporting the ideas that 1) learning is ongoing, 2) learning takes place in many different contexts and

situations, and 3) the individual plays a role in organizing and producing their own learning materials. Moreover in a PLE the management and personalization of the technologies is also part of the learning process (Attwell, 2007, p. 1). Consequently, we would initially propose that the difference between a VLE and a PLE lies in the fact that learning in the VLE is managed or controlled by a teacher; while in the PLE learning is self-directed. We shall, however, return with some more critical notes on these distinctions, which we feel over-emphasises a technological perspective.

The tension between learner and teacher control is also reflected in learning theories with a behaviorist approach at one pole and the social constructivist at the other. Therefore Dalsgaard (2006) argues that the question of whether to use a VLE/LMS or a PLE, depends on the pedagogy we build on. As a result he suggests we begin by choosing our learning theoretical foundation. Moreover he suggests a separation of the managerial-administrative systems from the learning processes. This, he argues, would leave more room for social software which supports self-governed, problem-based and collaborative activities supporting a social constructivist pedagogy (Dalsgaard, 2006, p. 2). However, when users are encouraged to manage their own learning environment, at least three types of disadvantages or difficulties emerge:

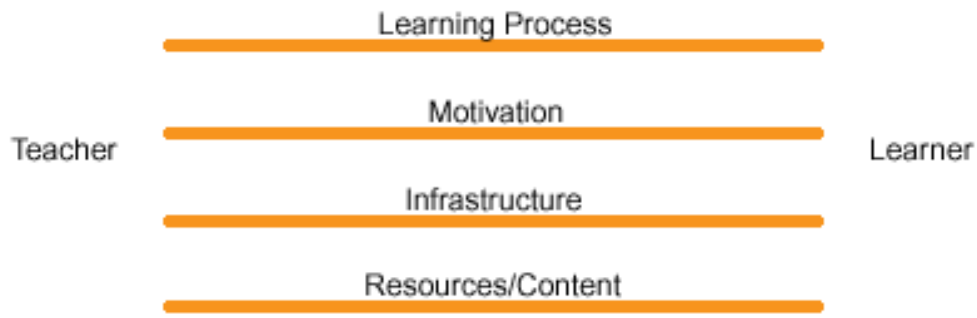
“it has been questioned whether learners have the sufficient skills to manage their own learning  
privacy becomes an issue since not everyone wants to learn in public or share their projects  
not everyone can or should teach in a "YouTube" and "Twitter" blogosphere.” (Notess, 2009)

Moreover, since the consequences of using web 2.0 technologies and more learner-centred pedagogies have not yet been thoroughly documented, many prefer to let the teacher manage or control the learning processes in a VLE (Crook et al., 2008, p. 37).

In relation to these discussions of VLEs vs. PLEs it should be noted that the sharp distinctions between PLEs and VLEs can be quite problematic. As previously argued there are good reasons for distinguishing between Web 2.0 as range of technologies and then Web 2.0 practices or activities. It is, however, possible to use web 2.0 tools in a very conservative, teacher-centred way. Therefore rather than equating PLEs or VLEs with particular teaching strategies and ideals we need to ask ourselves: what aspects of VLEs and PLEs support problem-based learning mediated by Web 2.0? However, to design we need to ask questions in relation to specific learning situations. Here we suggest that we add further nuance to this debate by not differentiating between particular technological solutions or platforms, but instead focus on questions of who *controls* the learning environment. Furthermore, as we shall explore in more details in the coming sections, we should be careful in dichotomous distinctions such as web 1.0 vs. web 2.0 or learning 1.0 vs. 2.0, but rather keep in mind, that web 2.0 is a matter of degree to which one adopts, not only a range of technologies, but moreso a set of practices or activities. In reality, therefore, we should not talk about web 2.0 learning, but rather *‘the degree to which a certain technology supported learning situation adopts what is commonly designated as web 2.0 technologies along with a set of practices which are more learner-centred, collaborative, interactive, production-oriented and open ended than traditional largely teacher-centred and content focused approaches’* – however, for brevity and clarity we shall use terms such as web 2.0 learning or web 2.0 oriented learning to cover this wide spectrum of possible practices. The matter of degree we explore through proposing some central dimensions or continuums of web 2.0 learning which can be seen as stretched out between teacher or learner control. This is inspired by the model for PBL developed in Ryberg et al. (2010) where the authors argue that control in PBL processes can be exercised across three central dimensions: *the problem, the work process, and the solution*. Each of these axes represents central aspects of PBL that can be controlled by either the teacher or the learner. As also proposed in Ryberg et al. (2010) it makes good sense to connect PBL and web 2.0, which means that the more general questions debated in relation to PBL and learning are also relevant in relation to web 2.0, even though new nuances and challenges emerge as well.

In relation to the scope of this paper we therefore suggest that we rethink the model presented in Ryberg et al. (2010) in relation to web 2.0. We therefore argue that it is crucial to address at least four aspects when planning web 2.0 learning: *The learning process, the motivation, the infrastructure (e.g. the system), and the resources/content* (see Figure 1). These four dimensions are based on a broad review of available literature within the area of web 2.0 in educational contexts (an online bibliography developed as part of our work can be found at: <http://www.zotero.org/groups/eatrain2/items>), and is thus an attempt at crystallising discussions and issues raised in a number of publications. In particular the model has been inspired by Crook et al. (2008) (who list 11 distinct tensions) and the tensions explored by e.g. Dohn (2009), Dohn & Johnsen (2009), Dalsgaard (2006), but has a broader foundation. From this broader reading we would also propose that there is a very

diverse and complex set of motives for adopting web 2.0 learning within education. These various motives can, however, be seen as sitting on a continuum in-between a ‘spicing-things-up strategy’ and a ‘radical change agenda’ e.g. are web 2.0 technologies employed to fulfil existing teaching or learning goals in a different, more motivating and interesting way? Or are they used to radically change or challenge the existing learning approach? We find that the overarching motive for engaging with web 2.0 learning is important for designers to reflect on, as this has ramifications for all of the dimensions. In particular in relation to the design of the learning outcomes and assessment, which we see as overarching items encapsulating and framing the four dimensions in the model below.



**Figure 1: Continua between teacher and learner control in web 2.0 learning**

For each of these axes or continua the teacher or the learner can be more or less in control, or the ownership can be distributed equally between them. The axis of the *learning process* concerns who controls the flow of the learning process, the collaboration or interactional dependencies, and how this control is managed. This axis is very similar to the problem and process axes explained in Ryberg et al. (2010) and it concerns not only who orchestrates the learning process, but also the very object of the learning process e.g. who controls ‘the problem’ i.e. what should be investigated and how. In this way it concerns questions of to which degree the learning process is self-managed and self-driven, and whether the learner decides what should be learned (learner defines the curriculum or learning goals/outcomes) – a full scale learner-managed and learner-driven learning process would probably not fit within existing formal education, though single courses or parts of a programme might be more learner-centred than others.

The *motivation* continua concerns questions like: Is the current project or course driven or fuelled by the learner’s own motivation or is the motivation of a more external nature i.e. teachers’ or institutional demands? The tension here also concerns conflicting learning goals in the educational system and web 2.0 practices (Dohn, 2009, pp. 344-345). As pointed out by Dohn, the engagement with web 2.0 activities and technologies in non-institutionalised settings seldom happens with the explicit intention of achieving well-defined learning outcomes; rather than being the main goal of the activity, learning is more often than not a secondary outcome. The main goal is often participation in itself, and while often being an intimate part and outcome of the activity, learning may not be the explicit goal of the activity. This obviously is in stark contrast to learning taking place within institutional settings, where the expected learning outcomes are more or less explicitly stated and necessary to adhere to in order to successfully pass a course, attain a degree etc. Although educational institutions and courses might differ in their approach and be more or less open-ended in terms of curricular demands (e.g. institutions, like Aalborg University, promoting problem based learning approach may have a thematic framework for a semester which shape courses and students’ self-chosen project, rather than a fixed curriculum) institutionalized learning will usually pose some demands on learning outcomes, structure and process. Thus, the fundamental motivational structure might be different, and we should be careful in assuming that the ‘tools’ in themselves are the motivation e.g. “many students have their own personal blog, therefore they will suddenly find algebra III a feast when handing in assignments in a blog, rather than the usual way”. Even if variation and experimentation within a learning context can certainly be motivating, we should be careful in assuming that we can easily transfer the ‘funniness’ or motivational structures from informal contexts to the formal arena (in this way the ‘spicing things up strategy’ runs the risk of investing too much confidence in the belief that the technologies are inherently motivating or exiting). These discussions also pose challenging questions concerning whether an activity is really web 2.0 learning if it is entirely based on extrinsic motivation/demands, or whether activities must include a certain level of intrinsic motivation to be “genuine”

web 2.0 learning activities. From another point of view this also touches upon issues of to which degree teachers and institutions can rely on learners being or becoming motivated, self-directed, which might differ significantly depending on age, subject, level of education and so on. As previously stated our intention is not to argue for how these tensions can be overcome, but rather to shed light on them, as for practitioners to reflect upon when engaging in practical course designs.

The *infrastructure* continua concerns questions of who controls or manages the infrastructure and how. By infrastructure we primarily mean the organisation of tools, although it can be difficult to separate the orchestration of tools from the axis of the learning process. However, concerns and questions do arise around the ownership and control of the tools of production and the content. For example, Dalsgaard (2006) suggests that students should choose and own the tools that are used as part of the learning processes (in order to separate management tools from the learning processes), however, as previously mentioned, some students might lack skills in identifying and using relevant tools for learning. Furthermore, concerns can arise around data safety, e.g. if a certain service were to function and students' work is lost, which would speak for an institutionalised system. On the other hand students will students be able to or have the right to export content produced within an institutional system for other purposes (and what kind of content the students will be allowed to publish in the first place)? This is also related to whether the tools are thought of as 'context-specific' or imagined to transgress boundaries and be potentially useful in other contexts (a life-long learning perspective) e.g. is a blog primarily designed for reflection within a specific course to meet particular learning goals, or as a means for scaffolding and promoting students' life-long learning and continuous blogging on self-chosen topics? These different strategies and issues of ownership might also structure and affect students' motivation and responses to the use of web 2.0 tools within an educational context in complex ways (Dohn & Johnsen, 2009).

Related to the former, the *resources/content* continua concerns questions regarding the creation of and ownership over content, but also what kind of resources are deemed acceptable within an institutional setting. As argued by Dohn (2009) there are some tensions between common, informal web 2.0 practices and the demands and rules of e.g. academia. While a perfectly sensible and meaningful response to a question in an informal forum for educational technologist of 'what web 2.0 is' could be to copy/paste some definitions lifted off from Wikipedia, blogs and garnished with a reference to an article, this might not fulfill institutional demands within an academic context. Potentially, such a response could be deemed to lack originality, be insufficiently researched and argued or be considered pure plagiarism if not properly cited. This also reflects and overlaps with the other dimensions mentioned, but highlight that there might be certain tensions in terms of what constitutes relevant content production within different practices, as there are different ground rules for what is produced, and different rationales for producing the content in the first place. In a non-institutional setting the 'task' might be formulated as identifying a fast and effective solution to a particular problem raised, and the solution is in itself a satisfactory product. However, within an institutional setting the task is not only to respond to a particular question with a quick solution, rather the process, active production and construction of the response is part of the learning process, and thus also part of a satisfactory outcome. As such the tension is not only related to ownership of content, but also to who defines these logics and rationales, as well as who decides on issues of authority and accountability and what constitutes relevant expertise.

These considerations also speak directly into issues on assessment or evaluation. As exemplified there might be discrepancies between what would be considered a satisfying response in informal vs. formal setting in relation to web 2.0 practices. This raises tensions in terms of how products or processes involving web 2.0 practices and technologies should be assessed, which is also intimately related to how the learning goals or outcomes are envisioned. In relation to the former there are some tensions between a participationist logic revolving around bottom-up, distributed, user-generated (and rated) open-ended content and then potential institutional demands of quality, accountability, control and assessment of a final product (and possibly demands of 'individual assessment'). These discussions are, however, also intimately related to the formulation of learning goals, outcomes and the need for constructive alignment (Biggs & Tang, 2007) between these. The learning goals of students' production of a wiki could for example be focusing on their ability to synthesize and critically reflect on a theory (goals more in line with a traditional curriculum approach and acquisition of knowledge relevant to the particular subject). Or focus on their ability to engage constructively in collaborative writing to scaffold the development of social and personal skills (in which case the quality of the content might be less important). In this sense practitioners reflections on the four dimensions in relation to design need to be firmly grounded in and aligned with considerations of the learning outcomes and types of assessment.

Although many of the dimensions overlap, we also believe there is a value in upholding the four aspects. By distinguishing between learning process and infrastructure we stress that a system in itself does not necessarily have an integrated pedagogy, which cannot be changed in the enactment of the system. Moreover by distinguishing between tools and the organization of these in an infrastructure we stress that using a web 2.0 technology in itself does not constitute web 2.0 learning. Rather, it is the organization or orchestration of the learning environment as a whole, which can be more or less web 2.0 learning-oriented. Consequently, the model stresses that whether a learning design is an instance of web 2.0 learning depends on how the power is distributed and managed across the different dimensions (and it would be questionable to which degree something could be considered web 2.0 learning if the teacher fully exercises control over all four dimensions). One aspect of designing web 2.0 learning can therefore be considered as a reflection on and negation of the control in a course across these four dimensions. We have therefore developed a series of more concrete questions (see Table 1) intended to provoke reflection, as to support practitioners in designing web 2.0 learning and to become aware of the tensions and potential pitfalls when designing web 2.0 oriented learning. These concepts, models and questions contribute to the development of our overall learning methodology and the design of a workshop, as explained in Buus et al. (2010). Also, the questions referenced below have become part of templates or 'toolkits' which are intended to act as 'mediating design artefacts' (Buus et al., 2010; Conole, 2007).

<p><b>The learning process: Who controls the learning process?</b>          Who defines what is to be investigated?          Who decides how this should be investigated?          Who will perform the activity?</p> <p>Who decides the flow and structure of the learning processes?          How are the learning processes organized?</p> <p>Who controls the collaboration?          How is the collaboration organized? Is it e.g. formal and/or informal?</p> <p><b>The motivation: Who controls the motivation?</b>          Is the motivation externally or internally driven?          To what extend should/can the students be self-motivated?          To what extend is learning in itself motivating?</p> <p><b>The infrastructure: Who controls the infrastructure?</b>          Who provides the infrastructure?          Who provides the tools?          Who owns the tools for production?          Who organizes the tools?</p> <p><b>The resources/content: Who controls the content/resources?</b>          Who makes the resources/content available?          What strategies (copy-paste or rip-mix-burn) for creating resources/content are supported?          What resources/content is it possible for learners to create?</p> <p>Who defines the different roles related to competence, expertise, authority, accountability and copyright?          Who has the competences/expertise?          Who has the authority?          Who is accountable for the resources/content?          Who has the copyright of the resources/content?</p>
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**Table 1: Questions for exploring tension in web 2.0 learning**

One aspect of our research team's approach and work is to provide practitioners with sets of concepts, questions and models. However, another aim is to supply practitioners with existing learning designs, patterns or other resources which can help them make sense of how web 2.0 oriented learning practices might be designed. We have therefore collected a number of both practically and theoretically oriented articles with examples of concrete implementation of web 2.0 practices and technologies, which we aim to translate into practice description and make available in Methopedia, which is an online wiki-based community for sharing learning activities and methods (Ryberg et al., 2008; Ryberg, Niemczik, & Brenstein, 2009). Methopedia, is a wiki-based network for educators and trainers that has been developed within the COMBLE project which is funded by the EACEA Lifelong Learning ICT Programme. The goal of the COMBLE project is to improve the quality of Blended Learning in higher, continuing and business education, and Methopedia (en.methopedia.eu) is a wiki and social community aimed at facilitating knowledge transfer between trainers/educators from different institutions or countries through interactive peer-to-peer support, and sharing of learning practices.

### **Bridging the Gap between Practices in an Iterative Design Process**

Building on a practice perspective on web 2.0, Dohn stresses that it is not technology in itself, which is important but the skill-relative affordances it poses for the agent. In relation to this it is important to note that skills and affordances develop from the skills the agent has and the practices s/he is already engaged in, and the understandings of which s/he agrees with (Dohn, 2009, p. 347). Consequently, to design web 2.0 mediated learning Dohn argues that we should build on existing practices and skills and make them more web 2.0 oriented (Dohn, 2009, p. 348). Here we, however, also agree with Crook et al. (2008) who argue we should build our research on documented exchanges in learning situations (Crook et al., 2008, p. 47). However, case studies in relation to adopting web 2.0 resources or technologies are seldom evaluated in relation to their impact on learning (Ibid.). In a review of existing research Conole et al. (2008) conclude that students are actively involved in co-designing their e-learning environment (Conole et al., 2008, p. 513), but also state that little in-depth research has been done on how students use technologies to support their learning (Conole et al., 2008, p. 512) – this might also be related to the fact that actual adoption of web 2.0 learning practices are relatively scarce, at least within secondary education (Crook & Harrison, 2008). Therefore, to find more consistent and well-established patterns in the use of and experience with web 2.0 oriented learning more analyses are needed.

Crook et al. (2008), however, speaks in favour of adopting web 2.0 technologies, mostly used in informal settings, in teaching, and one of the ways web 2.0 activities are used within education, according to Crook et al. (2008), is in communities of teachers. Examples of this could be teachertube.com, lemill.net, slideshare.com (Crook et al., 2008, p. 48) and Methopedia.eu. Common to these communities is the intention to share different kinds of learning resources like e.g. instructional videos, slides, learning tools and learning activities. However, from the literature it is also possible to identify a range of activities, and from literature we have identified a number of different practical approaches to the use of web 2.0 in learning situations. In relation to blogs there is a lot of interest in the area but not that big an actual uptake. This might be caused by the understanding that blogging is often seen as carrying an internal motivation. Wikis such as Wikipedia have been integrated in courses to a further extend. However this practice has not been formally evaluated (Crook et al., 2008, p. 52). Podcasting has been used in higher education in particular for the purpose of language learning. However, this has mainly been in support of more traditional ways of teaching such as recording lectures (Crook et al., 2008, p. 53). Such examples we aim at collecting and translating into descriptions of learning activities in Methopedia. The templates that are used in Methopedia are very basic, and encompass only a 'short description', 'process description', 'required resources', 'examples' and 'comments', which however have proven to be effective in quickly describing smaller learning activities (Ryberg et al., 2009). Once again we should be critical in regards to what constitute web 2.0 learning activities. As we have emphasised using a web 2.0 technology adopted from informal settings in an educational context does not automatically make the teaching more web 2.0 oriented learning. Because as previously mentioned web 2.0 technologies can equally be used to support curriculum-based and content-focused teaching.



## Conclusion

The objective of this paper has been to contribute to the theoretical foundation for a methodology for designing web 2.0 learning by identifying tensions in the cross field between web 2.0 and learning. These we hope can provoke necessary reflections in relation to practitioners' design of courses. We have argued that these tensions can be mapped as continua or axes stretched out between learner and teacher control, and we have argued that these four aspects concern: who controls the flow of the learning process, where the motivational structures are grounded (extrinsically or intrinsically), who controls and exercises ownership over the infrastructure. This has further lead to a series of questions, which will be incorporated as part of the CoED method, which we explain in more detail in Buus et al. (2010) and be transformed into a number of mediating design artefacts. To take into account the tensions in the field we suggest that practitioners address questions in relation to the four continua of learner and teacher control: the learning process, the motivation, the infrastructure (e.g. the system) and the resources/content. We suggest to use the questions identified in relation to each of these dimensions to discuss the consequences of our learning values in relation to incorporating different dimensions of web 2.0 in actual learning designs. In this way the continua and the questions derived from these can be used as a way to bridge the gap between pedagogical values and designing for practice. Consequently answering the questions in relation to the four continua is a way of making the choices in the preliminary phases of the design process tangible, and thus useful in relation to designing Web 2.0 mediated learning. Finally, another type of mediating design artefacts are the practices and examples that we aim to upload and share in Methopedia, which will be based on practices derived from publication of both a more theoretical and practical nature.

## References

- Anderson, P. (2007). *What is Web 2.0?: ideas, technologies and implications for education*. JISC. Retrieved from <http://www.jisc.ac.uk/media/documents/techwatch/tsw0701b.pdf>
- Attwell, G. (2007). Personal Learning Environments-the future of eLearning? *eLearning Papers*, 2(1).
- Biggs, J., & Tang, C. S. (2007). *Teaching for Quality Learning at University: What the Student Does*. Open University Press/Mc Graw-Hill Education.
- Buus, L., Georgsen, M., Ryberg, T., Glud, L. N., & Davidsen, J. (2010). Developing a Design Methodology for Web 2.0 Mediated Learning. In *Networked Learning*. Presented at the Networked Learning Conference 2010, Aalborg.
- Bygholm, A., & Buus, L. (2009). Managing the gap between curriculum based and problem based learning: Deployment of multiple learning strategies in design and delivery of online courses in computer science. *International Journal of Education and Development using ICT*, 5(1). Retrieved from <http://ijedict.dec.uwi.edu/viewarticle.php?id=267&layout=html>
- Conole, G. (2007). Describing learning activities -Tools and resources to guide practice. In *Rethinking Pedagogy for a Digital Age: Designing and Delivering E-learning* (pp. 81-91).
- Conole, G., de Laat, M., Dillon, T., & Darby, J. (2008). 'Disruptive technologies', 'pedagogical innovation': What's new? Findings from an in-depth study of students' use and perception of technology. *Computers & Education*, 50(2), 511-524.
- Crook, C., Cummings, J., Fisher, T., Graber, R., Harrison, C., & Lewin, C. (2008). *Web 2.0 technologies for learning: The current landscape – opportunities, challenges and tensions*. Retrieved from [http://partners.becta.org.uk/upload-dir/downloads/page\\_documents/research/web2\\_technologies\\_learning.pdf](http://partners.becta.org.uk/upload-dir/downloads/page_documents/research/web2_technologies_learning.pdf)
- Crook, C., & Harrison, C. (2008). Web 2.0 Technologies and Learning at Key Stages 3 and 4: Summary Report. *BECTA*. September.
- Dalsgaard, C. (2006). Social software: E-learning beyond learning management systems. *E-Learning*.
- Dohn, N. (2009). Web 2.0: Inherent tensions and evident challenges for education. *International Journal of Computer-Supported Collaborative Learning*, 4(3), 343-363. doi:10.1007/s11412-009-9066-8
- Dohn, N. B., & Johnsen, L. (2009). *E-læring på web 2.0*. Frederiksberg C: Samfundslitteratur.
- Jones, C., & Dirckinck-Holmfeld, L. (2009). Analysing Networked Learning Practices. In L. Dirckinck-Holmfeld, C. Jones, & B. Lindström (Eds.), *Analysing Networked Learning Practices in Higher Education and Continuing Professional Development*, Technology-Enhanced Learning. Sense Publishers.
- Notess, M. (2009, July). eLearn: Opinions - Not Dead Yet - Why the Institutional LMS is Worth Saving. Opinion. Retrieved from <http://www.elearnmag.org/subpage.cfm?section=opinion&article=118-1>

- Redecker, C. (2009). *Review of Learning 2.0 Practices: Study on the Impact of Web 2.0 Innovations on Education and Training in Europe*. European Commission, Joint Research Centre, Institute for Prospective Technological Studies. Retrieved from <http://ipts.jrc.ec.europa.eu/publications/pub.cfm?id=2059>  
<http://ftp.jrc.es/EURdoc/JRC49108.pdf>
- Ryberg, T., Brenstein, E., Pilt, L., Moczadlo, R., Niemczik, C., & Dirckinck-Holmfeld, L. (2008). Enhancing Blended Learning – Developing a Community Based Methopedia. In D. Remenyi (Ed.), *The Proceedings of the 7th European Conference on e-Learning* (pp. 394-405). Academic Publishing Limited.
- Ryberg, T., Glud, L. N., Buus, L., & Georgsen, M. (2010). Identifying Differences in Understandings of PBL, Theory and Interactional Interdependencies. In *Networked Learning*. Presented at the Networked Learning Conference 2010, Aalborg.
- Ryberg, T., Koottatep, S., Pengchai, P., & Dirckinck-Holmfeld. (2006). Conditions for productive learning in networked learning environments: a case study from the VO@NET project. *Studies in Continuing Education*, 28(2). doi:10.1080/01580370600751138
- Ryberg, T., Niemczik, C., & Brenstein, E. (2009). Methopedia - Pedagogical Design Community for European Educators. In D. Remenyi (Ed.), *The Proceedings of the 8th European Conference on e-Learning* (pp. 503-511). Academic Publishing Limited.