



# Discussion on Free and Open Source Software (FOSS) for Open Educational Resources

Discussion log, 16-22 October 2006

## INTRODUCTORY REMARKS

This log was prepared to identify and synthesize the main themes from forum messages of the first week of the discussion. It was a challenge to do justice to the variety and number of great ideas put forth during the week.

The themes have been ordered in an intuitive way, from issues of development to licensing to participation, and lastly general summaries from individual posts. And an effort was made to strike a balance between representative excerpts and at the same time maintain a sense of community conversation.

## 1. COMPARATIVE DEMANDS OF DEVELOPMENT

“Great instructional design, coupled with good practice OER production methodologies (e.g. adherence to Learning Design specifications, high levels of granularity, separating content from presentation) means that free content is at least as demanding as FLOSS development. [...] Agreed, FLOSS development requires specialist programming expertise. But I would also argue that excellent OERs requires specialist expertise - from instructional designers and educators. [...] It appears to me that the OER project is more challenging to get right as there's not a proven path to follow yet.”

“I'm not sure it's necessary to determine whether things are 'easier' or 'harder' in the FLOSS or OER worlds, but as the previous messages illustrate, there are differences, and understanding those differences will be important to applying lessons learned in the FLOSS community to OER. [...] In OER more significantly than in FLOSS, the production and distribution aspects of open sharing can be disaggregated. Typically in a FLOSS project production and distribution are tightly intertwined. The open distribution is what supports iterations (and thus production) by a wide community. There are certainly great examples of this happening in OER as well – Connexions comes to mind – but open sharing and open production need not necessarily occur together in OER.”

## 2. DEVELOPMENT MODELS

“One issue IIEP-OER may want to discuss is whether they want to support/use software development groups that do not play by standards - and are therefore trying to create a de facto monopoly on that type of software. Or, do they want to adopt/support software that does abide by standards, and thus is subject to competition from others who also implement to standards.”

“I also suggest a 'Cathedral' to develop/maintain content for these big introductory courses, which would involve paid teams of experts. In my proposal, the cathedral would be the project teams that already create content for the British Open University. But, there is also an element of the 'bazaar' approach to customizing the content initially created in the Cathedral. [...] A 'pure-bazaar' approach,

by the way, is one where you make tools available to faculty, and then just step back and let them do whatever strikes their fancy.”

“I agree that, at least in the initial stages, a ‘bazaar’ approach for the OER movement might not have the desired outputs in all parts of the world. This is why the AVU has opted initially for developing a highly supportive online environment (the ‘OER Portal’) along with various sensitization and training workshops, research activities, publications and conferences for OER creation, organization, dissemination and utilization.”

“We’re grappling with some of these ideas in our OER project. While we’re aiming to model a collaborative effort akin to a classic FOSS model like the Moodle community, in reality I believe each ‘course’ needs to be its own mini-project with interested parties moderating and adding to the content.”

“At the end of this forum, it may be beneficial if the forum summary included an outline of different development models for open-source educational resources and comments (benefits, challenges, situations suitable for the approach, etc.) with each model. This information could be based on the various discussions that have taken place during this forum. Forum participants may want to add to this summary by identifying projects that use a specific approach so that those contemplating a project will have a person or organization they could contact for additional information.”

### 3. MECHANISMS FOR QUALITY ASSURANCE

“While the overarching philosophies of the FLOSS movement and OER movement may be viewed as similar in that both are ‘rooted in freedom of knowledge and education’, I suspect that the processes in terms of the way people participate in the one or other of these movements vary considerably. For example, one mechanism that ensures quality in the FLOSS movement is centred around technical operability – if the software does not work there is a built in process in the FLOSS authoring process that either corrects it or discards it for something better. With OER, there is a possibility that poor quality content will continue to ‘survive’ unless similar (albeit non-technical) solutions for ‘correcting or discarding’ it are established.”

“For real projects that follow the principles derived from FOSS, there will always be a collaborative component. The in-built peer review of multi-way contribution makes worrying about quality mostly unnecessary. Attempts to regulate quality by creating mechanisms will almost certainly have the opposite effect; smaller volumes of content of lesser overall quality. ANYTHING that reduces participation will decrease volume and also decrease quality. This is the lesson from FOSS, it is also the lesson from Wikipedia. That is not to say that there should not be community norms, but that’s not the same as trying to regulate quality.”

“I am 100% for great quality OER content and great instructional design, but I wonder if that is the where we need to focus our efforts? On a very pragmatic level, I am quite concerned about this at my own institution. But perhaps on a global scale it is not so important. In his keynote address at OpenEd 2006 Eric Duval talked about wanting the problem of having ‘too much’ OER content available. The extension to that argument is that the quality resources will float to the top of the OER pool.”

“I agree quality is a strategic priority for those of us grappling with the promotion and sustainability of OERs. An interesting thought – I would far prefer access to a poor quality free resource, which I have the freedom to modify and improve for the benefit of my community than for example, a high quality PDF file that’s locked down with a NC restriction!”

## 4. CONSIDERATION OF LICENSING CHOICES

“It strikes me that the licensing area is where we can learn the most from FOSS. Our students (and faculty) can now find a vast array of information (both high and not-so-high) quality on the web. But they cannot re-use most of these resources without getting permission from the author. Most faculty will not go through the effort to do this. While it doesn't solve all the problems, having an appropriate CC license on most content would go a long way towards encouraging the development/improvement of content.”

“I think it's clear that one lesson to be learned from FLOSS is that careful consideration of license choices is required, and OER projects ought to take the time to look at the arguments for and demonstrable outcomes of various license choices. We could spend the whole two weeks on this issue alone (maybe a good topic for a separate thread), but maybe it's better to accept that there are differing views of the appropriateness of licenses and look at other areas in which FLOSS can inform OER development.”

## 5. LEVELS OF EXPERTISE AND MOTIVATION TO LEARN

“A big difference, as I see it, between the FOSS and OER communities is that FOSS people are extremely comfortable with any new techie-tools that come along to help them collaborate. In fact they use FOSS stuff to make FOSS stuff – the product and process are more or less the same thing. However people who are more interested in OERs may be more like me. I want to use ICTs to serve my needs – but I have little time, interest, or natural aptitude to get me over hurdles related to discovering how to make the stuff work.”

“Sometimes, working in the e-learning field, we can forget that many people have no knowledge of these tools and what use they might be for researchers and project development. We also forget that installing software – even modern, easy to use, web software, lies outside the experience of many users. But I think it is only through doing it – or better put – helping others to do it – that we will build up a sustainable community based resource of Open Educational Resources.”

“In conjunction with the learning and outcomes that will come from these discussions, two suggestions: Can we work out a way to place ourselves on an expertise continuum, find information apropos to that level of expertise, and easily find tutorials or ways to increase our expertise.”

“I would suggest that if we do that then we accept that we cannot change. For myself, I have never had any training in anything to do with technology. So if I rated myself it might have interfered with my ability to be agile. [...] My point is that these things are not about skills, but about attitude. [...] It is not lack of skills that prevents us from doing these things; it is fear.”

“I believe that we need to look at what will motivate OER practitioners to take that important step of becoming more familiar with the tools they need to participate in the OER process. The FLOSS community needed to undertake a similar process. I am fascinated as to how we might deconstruct the motivational factors exhibited in the FLOSS movement and find out whether it is possible to reconstruct them for the OER movement. [...] I think that providing a 'space' in which OER practitioners can receive the support they need is a key step to be taken. I also believe that fora like this enable us to unpick these issues in a very effective way.”

## 6. INVOLVEMENT OF YOUNGER GENERATIONS OF PARTICIPANTS

“I would like to suggest that an important difference between the FLOSS and the OER communities that needs to be recognised and addressed is in the age-group profile of the COIs (communities of

interest) and COPs (communities of practice). I do not have data, only experience over the past 20+ years which suggests that the historically highest ‘energy levels’ invested in FLOSS initiatives have come from age groups which either are, or perceive themselves to be, effectively excluded from today's OER movement. [...] How welcome do we make most young learners (formal and informal) to participate in our current OER processes, especially as improvers/creators of learning material?”

“It is vital to understand how to create projects around Free and Open Educational Resources that cater for the people we are serving as educators. And it is natural that they are younger, and many of them are digital natives or become so quickly when exposed to technology. [...] So, we need to have kinds of learning that take advantage of their awesome abilities to be creative with digital technologies. If we cannot do that, THEY will make choices that will marginalize formal higher education.”

“Those of us in the education business are missing something VERY BIG. The gaming community has figured it out, but I’m not sure they can articulate what it is that they know. The children want to get on with it and they don’t have patience with obstacles that stifle. They treat everything as open source. While we ponder how to create license free software and content, they are ignoring the issue.”

“As educators – I think we can play a role in ‘educating’ our youth about what is free and what is not. You're right – our children treat everything as ‘open source’ (e.g. Limewire). I think we can help by creating environments where they can create resources which are free, but at the same time educate that piracy is wrong. We can demonstrate that there is an alternative to piracy and that you can still have fun creating things as a community.”

“I would like to add that age should not be a hindering factor in the concept of learning communities and it has not been the experience. Just a month ago, the Indian State of Kerala (my home state) completed a project of introducing computers to the elderly women from the rural – agricultural farming – areas. These new learners – mostly above 60 years were not even literate in English. All of them were positive and were of the view that the training inputs will be useful to them.”

## 7. EMPOWERING USERS

“One of main driving forces behind FLOSS is that the source code is open allowing creativity in amending and adapting and further developing software to make it do what we want it to. In the OER debate the emphasis is often on the free circulation and use of teacher or expert created learning materials (and there is nothing wrong with that idea). But we need to extend our thinking to embrace how we can use FLOSS to empower users themselves – both teachers and learners - to create learning materials (OERs) for others.”

“A more active involvement of the user – students – in specifying the content and curriculum may make a difference in this scenario. Teachers need to recognize that there cannot be any teaching if there is no learning. There is need for teachers to realise the fact that the learners are able to construct knowledge. Once this is realized, the teachers will naturally grow above their level of delivering the content, to higher levels like that of becoming partners and facilitators in the process of constructing knowledge.”

“I think that the OER community still has too much a textbook production mentality. While having Free and Open textbook type content is valuable, and should not be underestimated, the real value will only come when education exploits the full potential of technology in combination with sound educational pedagogies. One of those involves the students in the creation of knowledge resources themselves.”

“Yes there is always a role for lectures and seminars and teachers have an important role in supporting learning. But the focus should be on tools for learners – not just platforms for teaching – to express

themselves in whatever media they feel comfortable in – including blogs and wikis, podcasts and videos – and to collaborate and share their stories.”

## 8. SUMMARIES OF LESSONS LEARNED

“I just completed an article that addresses the lessons FOSS has for the OER community. These are:

- Network effects occur at the edge of the network: in most cases bottom-up is more powerful than top-down.
- An active community of practice is the key to success. An open course collaboration is a knowledge ecosystem with an economy based primarily on exchange and reputation. When such a community involves all stakeholders, it not only provides the most value to its members but also grows the fastest.
- Including students in this community of practice strengthens their education.
- An OER community needs the ability to modify its resources since this is the only way they can be improved or adapted for new contexts.
- Community resources will evolve only if they include assessment as an integral component and the results of this assessment are used to drive improvement.
- Stakeholders need lots of simple, easy ways to make helpful contributions to the community so that it becomes a social norm. Ways to promote this include incentives, a reputation system, and a license that requires contribution. Technology is needed to make these contributions as frictionless as possible.”

“There are at least three different approaches to FOSS, which I've outlined below. It may be that the OER movement could benefit by developing a similar classification/structure.

- *"Classic" Open Source Software*  
Individuals contribute code and can be members of the initiative. Individual members work ‘for free’. But, there is usually an ‘inner circle’ of programmers who decide what code to distribute as part of ‘official’ releases. Also, these individuals can make money writing books for publishers like O'Reilly.
- *Community Source Software*  
The community source model will incorporate commitment from individuals that are sanctioned and supported by their host organizations, e.g., their employers. So, Sakai programmers get paid by their host institutions. For example, the programmers at Berkeley working on the Sakai gradebook get paid to do so.
- *Open Source Service Provider*  
The service provider develops open source software and licenses it ‘for free’. But, the OSSP gets paid to support users of that system. So, for example, if the system crashes, they get paid to bring the system back up. Or, for example, the OSSP gets paid to train end users of the system.”

“One strength of FOSS is community participation, not only that it exists but also that it is actively encouraged. However this often gives rise to numerous versions and source code branches which in turn can become difficult to encompass in global perspective. I see this parallel in OER resources too, OER as such must be flexible enough to make it recyclable, reusable in a local context or a different context. This may in turn lead to OER branches and versions. One challenge then is to cater for this requirement and to establish an environment/procedure which can ‘document’ the path of OER resources. This is vital for updates and additions of OERs that should/could benefit any branches.”

“I think there is one more lesson for the content end of Free and Open Resources for Education that can be derived from successful, fairly large (>20 developers) Free Software projects. The area is

probably best called architecture. [...] Create an architecture for a FORE project that is modular in design and scope so that independent teams can work on pieces independently. Allow sufficient granularity for anyone to make a contribution no matter how small.”

“In the discussion of lessons OER can learn from FOSS, we seem to be missing Rule #1 from the very first explication of FOSS principles:

‘1. Every good work of software starts by scratching a developer's personal itch.’

An appropriate restatement for us might be:

‘1. Every good OER starts by scratching a learner’s personal itch.’

For learners to create OERs like this, learners need first to be engaged in actually doing things – not just memorizing things. They must reach that point in which they want to ‘upgrade’ themselves – add new skills –they have to have the itch.”