GBIF Task Group on Electronic Learning

Final Report, v. 1.0

December 2010

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TASK GROUP ON E-LEARNING FINAL REPORT

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1 Introduction and justification

As pointed out in the Terms of Reference for this Task Group, **capacity building and training** have always been elements of **crucial importance** in the history of GBIF.

The GBIF 3rd Year Review included a clear statement on the future of training in GBIF: '*Other recommendations for training are to develop distance learning training approaches, and to identify organisations with similar goals with which GBIF can plan and run training activities together*'. In line with this recommendation, the GBIF Secretariat would like to reinforce GBIF's distant learning capacity with a new electronic learning (eLearning) facility called the **GBIF Virtual Classroom**.

The creation of this Task Group on eLearning is related to that and seeks the involvement of the GBIF Community. The activities of the Task Group started officially on the 26th of February, 2010. Maurice Martens, from The Netherlands, was nominated as the Chair of the Task Group on the 16th of March. The components of the Task Group (from now on TG) are:

- Balde, Oumar - nominated by SINEPAD
- Encinas, Maria - nominated by Spain
- Martens , Maurice - nominated by the Netherlands
- Norton, Geoffrey - nominated by Australia
- Talukdar, Gautam - nominated by India

The main tasks and objectives of the TG are detailed in the TG Terms of Reference.

2 Work done

The work accomplished by the TG from February can be divided into the following main areas:

1. **Discussions by email and on the GBIF Community Site based on participants' own experiences of e-learning. The main issues discussed referred to:**

    a. Suitability of available Learning Management Systems (LMS) to the different requirements of GBIF Nodes and alternatives to an LMS when it does not suit a Node's training capacity or resources.

Sometimes the functions that LMS's offer (student log-in, grade book, formal evaluation components, social networks, etc) might not be relevant in the context of some nodes training activities in which training is more related to self-learning. In these cases, other alternatives, such as the Node's own resources or ready access to online resources freely provided by other institutions, could be desirable. Several examples were given:

- ALISON, that is a for-profit social enterprise based in Galway, Ireland, and it is a free online learning resource for basic and essential workplace skills (http://alison.com/course/) that just requires a browser.
- Scenario based learning software (SBLi) created at the Centre for Biological Information Technology (University of Queensland) http://scenarios.sblinteractive.org/v2/main/StartScenario.aspx?Scenario=197
- Online material – meant for a lay audience and the general public – that introduces the concept of morphological identification and digital keys, for example. This could be used in a course for (say) volunteers involved in biodiversity projects. http://www.cbit.uq.edu.au/UQCentenary.aspx.
- Video films repositories: Program on Flora of the Netherlands that is free available on the internet www.floravannederland.nl
- Repositories of training materials (slides, videos, other documentation): GBIF Spain repository. http://www.gbif.es/formacion_ppal_in.php

However TG participants are in agreement on the fact that these resources are compatible with the selection of an LMS to be promoted in the frame of GBIF.

TG participants were of the opinion that all above mentioned resources should be considered prior to selecting a LMS, to be promoted in the framework of GBIF.

Stand-alone materials packaged according to SCORM standard (SCORM, **Sharable Content Object Reference Model**, is a collection of standards and specifications for web-based e-learning and it governs how online learning content and Learning Management Systems (LMSs) communicate with each other to guarantee interoperability) were dealt with among TG

participants. The interest of these SCORM packages is that they can be used out of LMS, simply with a web browser without internet connection and then available as stand-alone materials too. In addition, there are platforms that serve as repository of content packages and that are simpler than LMS platforms. An example of this kind of platforms is AContent (http://www.atutor.ca/acontent/). Although it is related to ATutor it can work independently as a repository of SCORM or IMS Common Cartridge packages, regardless of the LMS used. There is open software to package content according to SCORM or IMS Standards: examples are Reload (http://www.reload.ac.uk/) or Common Cartridge Builder (https://www.learningcomponents.com/apis.php). Besides, several LMS have tools to make SCORM/IMS packages (ATutor e.g.) or to play with them (Moodle e.g.).

b. Preference for an LMS's between the two proposed in the TG ToR, Moodle and ATutor, and comments about other alternatives (Blackboard).

It seems there is a slight preference among the TG participants for the Open Source platform, Moodle, especially based on the fact that Moodle is one of the most commonly used among open platforms, not only at secondary school (The Netherlands) but at University too (Spain). Other commercial platforms were discussed, like Blackboard, for its relevance in some countries (The Netherlands). Some of the TG participants underlined the more complex functionalities for administrator users in Moodle Platform compared with other platforms like ATutor that should be taken into account, given the limited human and technical resources in some nodes --as found out from the Survey about training (see point 3 of this section).

Moodle (open source) and Blackboard (commercial) seems to be the most popular platforms around the world judging by related activities in Forums and International Workshops on eLearning.

2. **Report on Latin American Workshop on Biodiversity e-Learning Platforms.**

This workshop took place at the Engineering Faculty of the Universidad Andina de Cusco, in Peru, from 10 to 13 of May, 2010. It was organized in the frame of The Ibero American Platform for Biodiversity Information (PIIB Project) funded by the Ministry of Science and Innovation (International Cooperation Complementary Action ACI2008-0737, Program for International Scientific Cooperation Promotion). Workshop organization and participant assistance were financed by PIIB and GBIF

Secretariat. The main aim of this workshop was to qualify workshop participants for e-learning platforms management (specifically Moodle and ATutor) and adequate design and implementation of e-learning projects in such a way that they are able to: a) organize and create virtual training courses related to biodiversity and informatics; b) support instructors in their tasks; c)train both, instructors and students.

14 people from 9 Latin American countries assisted.

Relevant issues, conclusions and discussions from referred workshop are presented in the full report annexed (Annex I). However main results from a survey about preferences for each platform handed out at the end of the workshop among participants are summarized below:

- In relation to platforms usability (general interface) the preferred platform was ATutor (36% of the total participants, against 29% that preferred Moodle).
- In relation to course content organization the preferred platform was ATutor with the 43% of the total (29% preferred Moodle).
- In relation to both, interaction tools and evaluation tools, the preferred platform was Moodle (with 64% and 43 % of the total respectively).
- In reference to administrator and instructor tools, the preferred platform was Moodle (43% and 50% of preferences, respectively).
- Nevertheless, relating student's tools, the platform with higher preferences was ATutor, with the 50% of the total (36% for Moodle).

- Global assessment shows a higher preference towards Moodle, with 50% of the total against ATutor, with 29%.

3. **Results from the Survey about Training and eLearning to GBIF Nodes.**

A survey was held among the GBIF Participant Nodes and Community in August 2010 to evaluate the needs, capacity and plans regarding training and electronic learning. The survey (launched on the 27th of August) was divided in two sections: Training program and topics (developed by GBIF Secretariat) and Electronic learning (developed by the TG and the Training Officer). A thorough description of the results of the survey was composed by the Training Officer and handed over to the members of the E-Learning Task group on the 8th of October. Although full detailed results are in annex II, here we summarize the most relevant results:

Participation

26 out of 98 GBIF Participants took part on the survey, with a good representation from countries all over the world. Due to these results it would be said that the interest of GBIF Nodes, as a whole, in training initiatives is moderate.

Training Program and topics

The GBIF Nodes that participated in the survey confirm their interest in training, but they also state that they face many limitations in terms of human, technical and financial resources. They would prefer to be presented with alternatives which are ready to use and deploy and these should not require extensive work for adaptation by the Nodes.

The **main audiences** identified by Nodes as the main target for training are scientists, technicians and post-college students.

Most of the nodes (53%) are not actively producing **training resources** and opportunities, but transforming existing materials or forwarding them unmodified to their constituency. Only 11% of the Nodes responding have a full training program developed. It also highlights the importance of enabling easy discovery and access to the training resources available in the network.

In relation to **training (receiving and delivering) topics,** for receiving training topics some of the highlights are data curation, data indexing, data publishing and data use. Data curation is a priority for the Nodes to deliver training.

Electronic learning

The current **involvement in electronic learning** in the GBIF Nodes is very low: a very significant number of the respondents (77%) either do not have plans to start eLearning initiatives or their plans are for the long term. Deploying their own electronic learning facilities is not a priority for most of the respondents.

Although Nodes are interested in **digital resources** the most common set up is a repository of individual documents: text and slides (56%), and multimedia (13%) mainly. Some Nodes reported that they would like to move to multimedia files if given the choice (26%). Most of the respondents would like to have asynchronous courses that users can consume online or offline without further support (37%), followed by a mixed program with online and onsite synchronous training (25%).

The interest in online **social networking** tools is moderate. At present support to participants is channeled mainly through individual or group interaction via email (53%).
The use of other communication media or support channels is quite low at present. In terms of what the Nodes would like to use in the future, teleconferences are the most demanded system (25%).

Most of the respondents have not taken a **decision regarding LMS** (75%). A significant number of the participants (57%) would support the platform chosen globally by GBIF if they were in the position to install their own LMS. Of those who have a preference regarding LMS (18%), all of them could prefer open source platforms, and the majority of them would prefer Moodle (14% of those 18%).

In relation to the **adaptation of training resources to eLearning**, topics closely related to software and protocols and standards are the ones identified as more suitable for eLearning by respondents. On the other hand, those related to personal and social skills are found less suitable for electronic environments.

GBIF nodes face many important **capacity and resource constraints** (internet access, relevant expertise, electric supply…) that block their attempts to develop eLearning initiatives. The design of light training materials that do not require high internet bandwidth, and ensure that resources can be used offline to the furthest extent possible might be a solution.

3 Conclusions and Recommendations

Based on the work described above, the TG makes the following conclusions and would like to propose certain recommendations:

1. It is recognized among TG participants that the functions that LMS's offer (student log-in, grade book, formal evaluation components, social networks, etc) might not be relevant in the context of some Nodes training activities in which training is more related to self-learning. In these cases other alternatives (developing their own resources or using resources provided by tertiary institutions) could be suggested and facilitated by GBIF (as ongoing electronic materials and repositories http://www.gbif.org/participation/training/resources/).

2. Although the TG participants did not discuss in depth the pros and cons of the two LMS platforms in different scenarios, the TG has shown a preference for Moodle.

This preference was based on the Survey results and the Report on Latin American Workshop on Biodiversity e-Learning (see annexes) as well as on the fact that Moodle is one of the most commonly used platforms. However, some of the TG members would like to point out that the more comprehensive capacities of Moodle --that make it an ideal eLearning platform for universities and high schools-- make Moodle more complex in terms of management. The complexity of running such a big platform, in relation to the scale of operations expected, should be carefully assessed to guarantee the success and sustainability of the training program. So, the functionalities of Moodle, if it is finally selected for GBIF's needs, should be customized to better support the foreseen scenarios in the GBIF community, as explained in next point.

3. It is necessary to adapt the implementation of the selected platform to the limitations in terms of human, technical and financial resources that the survey has revealed . In this sense, an easy auto installable LMS kit ready to use and deploy with easy to follow installation guides is desirable. This is especially relevant in relation to management functions that were considered as more complicated than those in other platforms.

4. In addition, a simplification of general functions related to instructors –following the same concept of "ready to use and deploy" extracted from the survey on Training and e-Learning– could be required in order to make it easier to implement.

5. Regardless of the selection of Moodle as the preferred LMS among TG participants and as the potential tool kit to be promoted by the Secretariat, it is necessary to underline that each e-learning initiative is unique and involves specifics that cannot be taken into consideration in general, in the form of "one solution suits all". On the contrary, each e-learning initiative should include relevant indicators and should provide a basis for the design and development of their e-learning environment. Depending on their specific situation and needs, other LMSs or other alternatives to LMSs (as reported in point 1 of this section and of Work done section) could be deployed by the Nodes according to their own strategies or limitations.

6. Given that,
    a. a lot of material related to biodiversity and bioinformatics is available on the internet;
    b. many GBIF nodes use this kind of material for their training programs (making them available or promoting resources developed by others), indicating the importance of enabling easy discovery and access to the training resources available in the network (as referred to in the survey about Training and eLearning)
    c. we now have (from the survey about Training and eLearning) a list of topics that are currently provided and which are needed, **the TG participants recommend that the GBIF Secretariat initiate a follow-up phase to identify, evaluate, and classify existing online training material in order to provide a repository or at least a searchable database for linking to this self-learning material (as examples enumerated in point 1 of the Work done section).**

7. As the scenario of situations and requirements among nodes is so wide (as extracted from the survey on Training and eLearning), it is necessary to provide scalable solutions.
    a. The simplest and perhaps, the **first step**, as mentioned in the previous paragraph, would be gathering the different kind of electronic materials produced by the nodes in a repository of materials (stand-alone components).
    b. However this option could be scalable too, and, as a **second step**, it would be interesting to consider the possibility of packaging related materials (multimedia, documents, and slides of the same themes or courses) according to SCORM in such a way that those packages could be used stand alone or in the frame of different LMS (Moodle, ATutor, Blackboard, others) facilitating and guaranteeing interoperability, in this way.
    c. And finally, and perhaps as **the third step**, a solution to an easy auto installable LMS kit with the selected platform could be considered (as mentioned in point 2 and 3 of this section)

Report of the GBIF Task Group on Electronic Learning

Annex I: Report for the Latin American Workshop on Biodiversity eLearning Platforms, Cusco (Peru), 10-13 Mayo 2010.

December 2010

Latin American Workshop on Biodiversity e-Learning Platforms Cusco, 10-13 Mayo 2010 Summary Report

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Annex 3. Results of the Questionnaire about Moodle and ATutor e-learning platforms 16

By mean of this report, relevant issues, conclusions and discussions from referred workshop are presented for the consideration of GBIF Task Group on Electronic Learning.

As one of the tasks specified in the e- learning GBIF Task Group is to test and select an Open Source e-Learning platform and as during the workshop two open source platforms (Moodle and ATutor) were showed and tested by the workshop participants, we think that results, conclusions and discussions from this even can be very useful for the development of Task Group reports and decisions.

This workshop took place at the Engineering Faculty of the Universidad Andina de Cusco, in Peru, from 10 to 13 of May, 2010. It was organized in the frame of PIIB Project (Latin American Platform for Biodiversity Information, http://www.recibio.net/PIIB.php) that is funded by Science and Innovation Spanish Department (International Cooperation Complementary Action ACI2008-0737, Program for International Scientific Cooperation Promotion). Workshop organization and participant assistance were financed by PIIB and GBIF Secretariat. 14 people from 9 Latin American countries assisted: Argentina, Uruguay, Brasil, Venezuela, Colombia, Nicaragua, Costa Rica, Cuba and Peru. The instructors were Alberto González Talaván, from GBIF Secretariat, Herón Andrés Meza, from IIAB, Peru, and Maria Encinas from GBIF Spain that was representing the GBIF Task Group on Electronic Learning too.

Introduction: workshop objectives

The use of e-learning platforms (Content Management Systems, Learning Management Systems or Virtual Learning Environments) as a mean to improve and spread biodiversity information outreach and capacity is becoming essential. This workshop came up with the aim of training experts to qualify them to manage these kinds of tools in the area of bioinformatics in Latin America and according to GBIF objectives.

So, the main aim of this workshop was to qualify workshop participants for e-learning platforms management in such a way that they are able to organize and create virtual training courses related to biodiversity and informatics and support instructors in their tasks as well as to train both, instructors and students, for and adequate design and implementation of e-learning projects in the frame of their institutions.

The development of these new Virtual Learning Environments or e-learning platforms will enable to increase biodiversity and informatics training opportunities for Latin America and according to GBIF objectives.

Workshop contents

Although the detailed program of the workshop is attached in annexes (Annex 1) here we present a summary of main issues dealt with:

- **Introduction about e-learning:** Concepts definition and main characteristics; most important elements to be taken into account for the development and implementation of an e-learning Project. Relevant commercial and open source Virtual Learning Environments available. Alberto González Talaván and Maria Encinas. 2h.
- **Moodle platform.** Main characteristics. Main tools related to administrator, instructor and student interfaces. Herón Andrés Meza. 8 h.
- **ATutor platform.** Main characteristics. Main tools related to administrator, instructor and student interfaces. Maria Encinas. 8 h.
- **Interoperability among Virtual Learning Environments**: SCORM standard. SCORM packages usage in Moodle and ATutor. Creation of SCORM packages in RELOAD. Another ways of interoperability and information exchange. Maria Encinas y Herón Andrés Meza. 2 h.
- **Workshop discussion, assessment and conclusions**. Alberto González Talaván, Herón Andrés Meza y Maria Encinas. 2 h.

The workshop was designed from an eminently practical training.

For each of the Virtual Learning Environment the students practiced by mean of exercises, presentations or guided demonstrations the different functionalities and tools available for every user profiles: administrator, instructor and student.

As platforms administrators the students learnt basic tools and functions to properly establish platform settings as well as to configure modules and other essential functions for instructors and students.

As instructors, the students worked on the creation and configuration of virtual courses and on the practice and application of basic tools related to course implementation (interaction tools as chat and forum, evaluation tools, tracking tools, etc.) Teaching materials to design the course (ppt presentations, multimedia files, Word documents) provided from courses and workshops in a classroom setting at GBIF Spain, Unit of Coordination.

As students, those present at workshop explored different functions and tools in relation to courses previously created by instructors: course contents navigation, interaction tools, evaluations tools, tasks and activities provided, resources available, etc.

The last part of workshop was dedicated to interoperability among platforms. SCORM was the selected standard to achieve interoperability because it's supported by main platforms and it is one of the most popular. SCORM packages were created into ATutor platform and by mean of RELOAD software (specific tool to create SCORM packages and other interoperable standardized packages). The created packages were tested on the two platforms, ATutor and Moodle.

By mean of Moodle platform, a tool developed by IIAP IT specialists to share biodiversity information provided by different institutions was showed.

To close the event, a questionnaire to assess the workshop usefulness was delivered.

In relation to global workshop assessment, four participants evaluated the workshop with marks between 8 and 10 (8, 9, 9.5 and 10), 4 participants evaluated it as "excellent" and 6 participants as "very good".

From the results of this question and specially from the results of the question "Adquired knowledge" -related to that all the students agreed with the very useful of learnt issues to be applied to their work- it can be stated that a properly accomplishment of previously established objectives has been achieved.

In the same way another anonymous survey about platforms assessment and preferences (strength and weakness) and interests in e-learning Project implementation into own institutions was given out (both of them, survey and results, are attached in Annexes 2 and 3). A discussion about these issues started as a workshop close. Next we gather the relevant topics and conclusions from the discussion and from the results of the survey.

Discussion and conclusions: Moodle and ATutor, strength and weakness

We would like to show below the main conclusions and results from workshop participant interaction and assessment survey for its consideration by GBIF Task Group on Electronic Learning members.

We think that these comments, opinions and survey results, although only from a sample of potential users, could be of help as a starting point for achieving our objectives as task group.

Discussion about platforms: strength and weakness; perceptions and notes from students interaction along the workshop.

Next we gather relevant comments and opinions about studied platforms:

- Platforms may be used not only as tools to create virtual campus and virtual courses but as learning objects repositories or as contents management systems. Anyway online courses may be absolutely compatible to workshops in a classroom setting (blended learning).
- Moodle seems more flexible and scalable and it has more functionalities and tools. So it is seems more suitable for a complex learning environment as University courses. However ATutor has a more intuitive interface that makes it more adequate for less complex environments as, for example, complementary training (short courses, post graduate courses, etc.)
- The content edition in ATutor (tasks related to creation and configuration of courses by the instructor) seems to be more complex than in Moodle, especially for those persons less familiar to html editors (although ATutor presents a visual interface that makes it easier, some functions are necessary to be made by mean of code as marking terms of glossary). However, and after being familiar to the content edition tools, the great majority of students agreed with the matter that finally it is not such a complex process.
- In relation to the relevance of Accessibility and Adaptability -one of the main specific qualities that differentiate ATutor from others platforms- several students underlined that although in a first phase it does not seem to be a relevant point to select a platform, in a exploitation phase it could be a differentiation factor and a good opportunity to increase e- learning offer.
- Although in the two platforms the availability of extra modules is broad, however in ATutor some basic modules as calendar are not integrated. It is necessary to install this module as extra and the results are not so good as in Moodle, where it is an integrated tool.
- Files downloads in ATutor was slower than in Moodle, perhaps because all the students were trying to work at the same time and the server was located in Spain, not in Peru. A student stressed that a module that allowed managing and synchronizing files and working out line would be very useful. Students asked about the capability of different platforms in relation to support a high number of courses and users.

- Technical support and number of users (popularity) was underlined as essential in selection a platform. The better the technical support and greater the number of users, greater the possibilities of solving problems during installation and exploitation of e-learning platform. In this sense is relevant to note that when searching Moodle in Google, the number of results is higher than searching ATutor.
- In ATutor, the different tools can be accessed from different points. This attempt to facilitate the location of functions turns into counterproductive and confused.
- The selection of one of the platforms depends on the e-learning Project objectives and characteristics. Both are good platforms and both have strength and weakness. Finally one gets used to that one with what she/he usually works.
- The most important is the e-learning Project, most than the platform used to show it. One of the students related her personal experience in the implementation of Moodle. Finally, motivation declined and platform usage failed. So it was necessary to resort to other external interaction tools to recapture the interest in platforms (as forum, chats or others tools).
- It would be very interesting to know how much time takes a student being familiar to a specific platform in order to have another factor helping in selection. Although ATutor seems more intuitive for students, however Moodle seems to have more functionalities and possibilities.
- Moodle seems to be easier for the student and ATutor easier for the instructor because of more organized contents.
- Restrictions in web connectivity should be considered in the design of e-learning Project and in designing courses. When connectivity are scarce or low it is necessary to replace heavy files (video files for example) for others less heavy as word or pdf files.
- The interfaces showed both in Moodle and ATutor are the most basic ones. It is necessary to take into account that they can be improved, especially if specific programming resources are implemented.
- Interaction and communication tools are not so relevant into the platforms; there are other tools as Skype or gmail, out of the platforms, much more effective and finally they are what are used by students.

Results of Survey about Moodle and ATutor assessment

The survey was divided into two parts. The first one was about platforms preferences in relation to interface and tools for each user interface: administrator, instructor and student. The second one was referred to the interest in implementing an e-learning Project in the frame of participants' institutions.

Preferences about Moodle and ATutor tools and functionalities

- In relation to platforms usability (general interface) the preferred platform was ATutor with the 36% of the participants' votes (29% preferred Moodle and 29% preferred both).
- In relation to course content organization the preferred platform was ATutor with the 43% of the votes (29% preferred Moodle).

- However, in relation to both, interaction tools and evaluation tools, the preferred platform is Moodle (with 64% and 43 % of votes respectively).
- In the same way and in reference to administrator and instructor tools, the preferred platform is Moodle (43% and 50% of preferences respectively).
- Nevertheless, relating student's tools, the platforms with higher preferences was ATutor, with the 50% of votes (36% for Moodle).
- Global assessment shows a higher preference towards Moodle, with 50% of votes against ATutor, with 29% of votes).

Implementing an e-learning Project in the frame of your institution

- Referring future plans for implementing an e-learning platform, 93% of participants expressed their intention of implementation, either immediately (43%) or after a financial request to start a new related Project (50%). Only 7% of participants (1/14) did not have intention of implementing e-learning platforms within a short time.
- In relation to the kind of e-learning implementation 57% of participants tended to favor a blended learning and 28% of participants preferred a whole electronic learning (14% without facilitators and 14% with them).
- Referring the relevance of managing diverse languages, 64% of participants considered secondary this issue because of the main language of platforms and courses would be Spanish. However a 29% of participants think that multilingual support is essential due to they need to use several languages in their e-learning project.
- Finally and in relation to the influence of a previously selected platform by GBIF or PIIB 43% of participants express that they will make their own decision maintaining interoperability (21% express that the decision made by PIIB or GBIF do not influence their decision and another 21% say that they will select that one platform selected by GBIF or PIB).

To close the discussion section, Alberto González Talaván proposed the creation of an interaction and work group into the GBIF Community Site in order to keep ourselves in contact and collaborate in future initiatives, ***Grupo de interés sobre formación electrónica en español*** (http://community.gbif.org/pg/groups/6083/grupo-de-inters-sobre-formacin-electrnica-en-espaol/). 7 people registered in this new group. The main objective of that was to be in contact in order to develop or participate in next e-learning initiatives.

Annex 1. Detailed program of the workshop

10th of May, 2010, Monday.

09:30 – 11:00

- Welcome. Workshop introduction and objectives.
- Basic concepts about e-learning.
  - Main characteristics
  - E-learning project planning and design.

11:00 - 11:30 – Coffe break.
11:30 – 12:30

- **E-learning platforms**
  - Introduction
  - General characteristics
  - Kind of platforms
  - Most popular platforms
  - What one to select?
  - Platforms demos

12:30– 13:30

- **MOODLE PLATFORM**
  - Introduction
  - General characteristics and presentation.
  - Administrator, instructor and student interfaces: basic functions and first approach
    - Entering platform
    - Sending a message
    - Updating our personal profile
    - Changing our password
    - Navigating into a course
    - Calendar
    - Resources and activities
    - Forums
    - Practical exercises

13:30 - 15:00 - Lunch.
15:00 - 16:30

- **Moodle: Administrator interface**
  - Case study 1. System preferences and users
    - Rolls user management
    - User Management
    - General settings

16:30 - 17:00 – Coffe break
17:00 - 18:00

- **Moodle. Administrator interface (to be continued).**
  - Case study 2. Modules and general management of courses.
    - Modules management
      - Installation, unistallation and settings
    - Course management
      - Categories

        - Courses formats
        - File manager
        - Backups

11th of May, 2010, Tuesday.

09:00-11:00

- **Moodle. Instructor interface**
    - Case study 3: Creating a course. First part.
        - Editing a course
        - Content elements
            - HTML editor
            - Labels
            - Resources
            - Lessons
            - Glossary
            - Wikis
        - Learning materials: multimedia (videos), presentations, texts in pdf and word from two workshops in a classroom setting at GBIF Spain.

11:00 - 11:30 – Coffee break
11:30-12:30

- **Moodle. Instructor interface**
    - Case study 4: Creating a course. Second part.
        - Activity elements
            - Polls
            - Tasks
            - Surveys and exams
            - Questionnaire
        - Review, assessment and marks.
        - Learning materials: multimedia (videos), presentations, texts in pdf and word from two workshops in a classroom setting at GBIF Spain.

12:30-13:30

- **Moodle. Student interface**
    - Case study 5: Attending a course. Student' main functions and tools. First part.
        - Course contents elements
            - HTML editor
            - Labels
            - Resources
            - Lessons
            - Glossary
            - Wikis
        - Learning materials: multimedia (videos), presentations, texts in pdf and word from two workshops in a classroom setting at GBIF Spain.

13:30 - 15:00 - Lunch.
15:00 - 16:15

- **Moodle. Student interface**
    - Case study 6: Attending a course. Student' main functions and tools. Second part.
        - Course activities
            - Polls
            - Tasks

        - Surveys
        - Questionnaires
    - Marks
    - Learning materials: multimedia (videos), presentations, texts in pdf and word from two workshops in a classroom setting at GBIF Spain.

16:15 - 16:45 – Coffee break.
16:45 - 18:00

- **ATUTOR PLATFORM**
    - General characteristics and philosophy
    - Installation notes
    - Presentation and first approach to platform
    - Practical exercises

12th of May, 2010, Wednesday

09:00-11:00

- **ATutor. Administrator interface: basic functions.**
    - System preferences
        - Home
        - Default preferences
        - Languages
        - Themes
    - Course management
        - Creating a course
        - Establishing course categories
        - Default course tools configuration
        - Others: Forums management and backups
    - Users management and enrolment
        - Creating a user account and administration account.
        - Changing a user prolife and enrolling a user
    - Modules
        - Installing a new module
    - Practical exercises

11:00 - 11:30 – Coffee break
11:30-13:30

- **ATutor. Instructor interface: basic functions.**
    - Case study 1: Creating a course. First part.
        - First step: general configuration of the new course.
        - File manager
        - Content edition
        - Creating surveys and questionnaires
        - Enrolling students in a course
        - Learning materials: multimedia (videos), presentations, texts in pdf and word from two workshops in a classroom setting at GBIF Spain.

13:30 - 15:00 - lunch.

15:00 - 16:15

- **ATutor. Instructor interface: basic functions.**
    - Case study 1: Creating a course. Second part.
        - Announcements
        - Forums
        - Assignments
        - Chat
        - Course backups
        - Sending an email
        - Polls
        - Reading list and resources
        - Others: groups, course tools, links, grade book.
        - Learning materials: multimedia (videos), presentations, texts in pdf and word from two workshops in a classroom setting at GBIF Spain.

16:15 - 16:45 – Coffee break
16:45 - 18:00

- **ATutor. Student interface: basic functions.**
    - Case study 2: Attending a course.
        - Exploring course contents
        - Sending assignments
        - Surveys and Questionnaires
        - Forums
        - Polls
        - Links
        - Others: Glossary, FAQs, Reading list, directory, my tracker, Chat.Learning materials: multimedia (videos), presentations, texts in pdf and word from two workshops in a classroom setting at GBIF Spain.

13rd of May de 2010, Thursday

09:00-11:00

- **E-learning platforms interoperability.**
    - Platforms interoperability and information exchange: SCORM and IMS Common Cartridge standards.
    - SCORM packages
        - SCORM and Atutor: creating and importing SCORM packages
        - Creating SCORM packages in RELOAD
    - Using SCORM packages in Moodle
    - Practical exercises

11:00 - 11:30 – Coffee break
11:30-13:30

- **Workshop discussion, assessment and conclusions. Platform assessment.**
- **Closing workshop.**

Annex 2. Questionnaire about Moodle and ATutor e-learning platforms

Questionnaire about Moodle and ATutor e-learning platforms

Instructions

There are a total of 14 questions in this questionnaire and its filling will take you about 5 minutes. Your opinion is relevant for us, so we thank you very much for your time.

Question 1: Usability. Referring the general platform interface (default preferences, functions appearance, etc.) What platform do you prefer?

- ☐ Moodle
- ☐ ATutor
- ☐ None of them
- ☐ Both
- ☉ *I do not know*

Question 2: Content organization. Exploring a course and in relation to visualization of contents (lessons or themes, presentations, media,…) What platforms do you prefer?

- ☐ ATutor
- ☐ Moodle
- ☐ Both
- ☐ None of them
- ☉ *I do not know*

Question 3: Interaction tools. About Chat, Forums, messages exchange, etc. ¿What platform do you prefer?

- ☐ Moodle
- ☐ ATutor

- ☐ Both
- ☐ None of them
- ☉ *I do not know*

Question 4: Assessment tools. In relation to the creation of evaluations, exercises and polls, what platform do you prefer?

- ☐ Moodle
- ☐ ATutor
- ☐ Both
- ☐ None of them
- ☉ *I do not know*

Question 5: Administrator interface. What platform do you prefer?

- ☐ Moodle
- ☐ ATutor
- ☐ None of them
- ☐ Both
- ☉ *I do not know*

Question 6: Instructor interface. Relating to course creation and configuration, What platform do you prefer?

- ☐ Moodle
- ☐ ATutor
- ☐ Both
- ☐ None of them

- [x] *I do not know*

Question 7: Instructor interface. Referring tracking students tools, what platform do you prefer?

- [ ] Moodle
- [ ] ATutor
- [ ] None of them
- [ ] Both
- [x] *I do not know*

Question 8: Student interface. In relation to courses content exploration, what platform do you prefer?

- [ ] ATutor
- [ ] Moodle
- [ ] Both
- [ ] None of the
- [x] *I do not know*

Question 9: Global assessment. After being familiar to these two open source platforms, I prefer…

- [ ] Moodle
- [ ] ATutor
- [ ] Other open source platform
- [ ] I would select a commercial platform if this made my project easier.
- [ ] Other choice
- [x] *I do not know*

Question 10: My plans for implementing an e-learning Project include…

- ☐ To start immediately an e-learning project from those learnt in this workshop
- ☐ To start a new e-learning project after applying for a financial proposal
- ☐ I have no plans for implementing an e-learning project at a short time
- ☐ I have no plans to start an e-learning initiative
- ☉ *I do not know*

Question 11: What kind of e-learning implementation would you prefer?

- ☐ Electronic learning, without facilitators
- ☐ Electronic learning, with facilitators
- ☐ Blended learning
- ☐ Other kinds
- ☉ *I do not know*

Question 12: Referring languages, how much important is for you a multilingual support?

- ☐ It is essential, because I need to use several languages at the same time.
- ☐ It is secondary because the main language will be Spanish.
- ☐ It is not relevant
- ☉ *I do not know*

Question 13: The selection of a platform in the frame of GBIF or PIIB will influence your decision?

- ☐ The selected platform will be too my preferred one
- ☐ I will make my own decision, maintaining interoperability.

- ☐ This decision will not affect my own decision.
- ⊙ *I do not know*

Question 14: Observations.

Annex 3. Results of the Questionnaire about Moodle and ATutor e-learning platforms

Questionnaire about Moodle and ATutor e-learning platforms

Statistics

Question	I do not know	Moodle	ATutor	None of them	Both
Question 1: Usability. Referring the general platform interface (default preferences, functions appearance, etc.) What platform do you prefer?	1 / 14	4 / 14	5 / 14	0 / 14	4 / 14
	7%	29%	36%	0%	29%

Question	I do not know	ATutor	Moodle	Both	None of them
Question 2: Content organization. Exploring a course and in relation to visualization of contents (lessons or themes, presentations, media,…) What platforms do you prefer?	1 / 14	6 / 14	4 / 14	3 / 14	0 / 14
	7%	43%	29%	21%	0%

Question	I do not know	Moodle	ATutor	Both	None of them
Question 3: Interaction tools. About Chat, Forums, messages exchange, etc. ¿What platform do you prefer?	2 / 14	9 / 14	0 / 14	2 / 14	1 / 14
	14%	64%	0%	14%	7%

Question	I do not know	Moodle	ATutor	Both	None of them
Question 4: Assessment tools. In relation to the creation of evaluations, exercises and polls, what platform do you prefer?	1 / 14	6 / 14	5 / 14	2 / 14	0 / 14
	7%	43%	36%	14%	0%

Question	I do not know	Moodle	ATutor	None of them	Both
Question 5: Administrator interface. What platform do you prefer?	2 / 14	6 / 14	5 / 14	0 / 14	1 / 14
	14%	43%	36%	0%	7%

Question	I do not know	Moodle	ATutor	Both	None of them
Question 6: Instructor interface.	1 / 14	7 / 14	6 / 14	0 / 14	0 / 14

Question	I do not know	Moodle	ATutor	Both	None of them
Relating to course creation and configuration, What platform do you prefer?	7%	50%	43%	0%	0%

Question	I do not know	Moodle	ATutor	None of them	Both
Question 7: Instructor interface. Referring tracking students tolos, what platform do you prefer?	1 / 14	7 / 14	4 / 14	0 / 14	2 / 14
	7%	50%	29%	0%	14%

Question	I do not know	ATutor	Moodle	Both	None of them
Question 8: Student interface. In relation to courses content exploration, what platform do you prefer?	1 / 14	7 / 14	5 / 14	1 / 14	0 / 14
	7%	50%	36%	7%	0%

Question	I do not know	Moodle	ATutor	Other platform...	I should select a commercial one if...	Other choice...
Question 9: Global assessment. After being familiar to these two open source platforms, I prefer…	3 / 14	7 / 14	4 / 14	0 / 14	0 / 14	0 / 14
	21%	50%	29%	0%	0%	0%

Question	I do not know	To start immediately...	After applying for a funding proposal ...	I have no plans at a short ...	I have no plans...
Question 10: My plans for implementing an e-learning Project include…	0 / 14	6 / 14	7 / 14	1 / 14	0 / 14
	0%	43%	50%	7%	0%

Question	I do not know	E-learning without facilitators...	El-earning with facilitators...	Blended learning	Others
Question 11: What kind of e-learning implementation would you prefer?	1 / 14	2 / 14	2 / 14	8 / 14	1 / 14
	7%	14%	14%	57%	7%

Question	I do not know	Essential, I need it...	Secondary...	It is not relevant...

Question	I do not know	Essential, I need it...	Secondary...	It is not relevant...
Question 12: Referring languages, how much important is for you a multilingual support?	0 / 14	4 / 14	9 / 14	1 / 14
	0%	29%	64%	7%

Question	I do not know	The selected platform will be my preferred ...	I will make my own decision...	This decision will not affect my own decision...
Question 13: The selection of a platform in the frame of GBIF or PIIB will influence your decision?	2 / 14	3 / 14	6 / 14	3 / 14
	14%	21%	43%	21%

Question	I do not know	Resultados
Question 14: Observations.	5 / 14	See results below (only about platforms, the rest were opinions about the workshop)

Results for **Observations:**

-Both platforms work well, however I think that ATutor is easy to implement and more versatile.
-It is complicated to answer what platform is better. I think that it depends on the institution objectives because both platforms have advantages and disadvantages. A monitoring of our implementation processes would be a good idea in order to learn from good experiences.
-It is necessary to go into the practice of both platforms in order to make a better decision about what is the most suitable one. RELOAD is a very useful and intuitive tool. My institution prefers open source platforms. We will implement what I have learnt in this workshop to create a new area related to e-learning into my institution.
-It is necessary more training in the management of platforms.
-It is necessary to have a good informatics infrastructure to achieve a smooth running.
-Both platforms are interesting and good; they are of great help in designing on line courses.

Report of the GBIF Task Group on Electronic Learning

Annex II: Summary and analysis of the results of the Survey about Training and eLearning to GBIF Nodes

December 2010

Survey about Training and eLearning to GBIF Nodes

Summary and analysis of the results
GBIF Secretariat, November 2010
Ver 1.1

In August 2010, GBIF Participant Nodes were asked to participate in a survey to evaluate their needs, capacity and plans regarding training and electronic learning.

This document includes a summary of the responses received, a preliminary interpretation by the GBIF Secretariat and a proposed list of actions to tackle the challenges highlighted by the results.

The results of the survey were presented to the GBIF Science Committee during its meeting in Seoul (Korea) in October 2010.

Summary

Active GBIF Nodes confirm their interest in training, but they also state that they face many limitations in terms of human, technical and financial resources. If given the choice, they would prefer to be presented with alternatives which are ready to use and deploy. In this context, the role of the GBIF Secretariat as a facilitator and provider of training opportunities is reinforced.

In terms of eLearning, the majority of the nodes are not interested in deploying their own facilities in the short future, but they are in favour of the use and promotion of digital resources. The use of online social platforms for training is very low.

Thematically, the needs of the nodes are very diverse, reflecting the diversity of the network and their different levels of development. Data quality and use are two topics that are identified as a priority by most of the Nodes though.

Key Findings

Participation in the survey

1. 26 out of 98 GBIF Participants took part on the survey, with a **good representation** from countries all over the world.

Existing capacity

2. Nearly all the respondents are **interested in training**, but the majority either **do not have the capacity** or they restrict their activities to forwarding or editing existing resources. This supports the role of the GBIF Secretariat as facilitator in the production and access to training resources.
3. The limited current human capacity in the nodes for training related activities suggests that **future initiatives offered to them must be ready-to-use and deploy** and must not require extensive work for their adaptation by the nodes.
4. The **level of evaluation and follow-up** by the nodes of their training initiatives **is rather low**, most probably provoked by the previously mentioned lack of human capacity.

Audiences

5. The main **target audience** identified by nodes are **scientists, technicians and post-college students**. Training activities in the context of GBIF can be built assuming a basic level of understanding of biodiversity and biodiversity informatics.

Electronic learning

6. Most of the respondents are **not interested in deploying** their own electronic learning facilities.
7. The current **involvement** of Nodes in eLearning and in the **use** of digital resources is **low**. Most of the respondents would like to offer courses that users can follow online or offline without further support, followed in the list of preferences by online and onsite synchronous training.
8. A significant number of the participants would **support** the eLearning platform **chosen globally by GBIF** if they were in the position to install their own LMS. Very few have a strong preference for which system to use, with **Moodle** being the most popular among them.
9. Node managers are generally **interested in digital resources**, but they are currently using them at a basic level (text and slides). They would like to move to multimedia if given the choice.
10. The respondent GBIF nodes have **not yet exploited** the full potential of collaboration among the participants in their training initiatives through the use of **social media** and other communication technologies.
11. The main **barriers** identified by the respondents to the uptake of eLearning is the **lack of means and capacity**. To mitigate this, training resources must be light and have off-line versions, if possible.

Thematic scope

12. The **needs** of the nodes regarding in which topics to receive training are **very diverse**, which is a reflection of a very diverse network. Some of the highlights are data curation, indexing, publishing and use.
13. GBIF Nodes have **more interest in receiving training rather than delivering training** to their communities. When doing so, data curation is a clear priority, followed by generic introductions to biodiversity informatics and training about protocols and standards, metadata, data publishing and use.
14. Topics closely related to **software and protocols and standards** are the ones identified as **more suitable for eLearning** by respondents. On the other hand, those related to personal and social skills are found less suitable for electronic environments.

Proposed actions by the GBIF Secretariat

In order to address the issues highlighted by the results of this survey, the GBIF Secretariat proposes the following actions:

1. The GBIF Secretariat will not promote any specific **Learning Management System** (LMS) for its deployment among the nodes;
2. A **Virtual Classroom** based in the Moodle LMS will be maintained by the GBIF Secretariat and will be readily available for the Nodes to use/promote;
3. **Content-rich training resources** will be served and packaged in a way that they are easy to use/distribute **offline** by the nodes if they wish so;
4. The GBIF Secretariat will **improve access to training resources** via the GBIF Online Resource Centre.
5. The Secretariat will try to **cover as many subjects of the interest of GBIF Participants Nodes as possible**, starting by those identified with a higher priority in this survey: data curation, publishing, indexing and use.
6. The GBIF Nodes will be contacted when creating new **Training Experts Networks** as they have good connexions with training experts;
7. Support for **regional collaboration** in training will continue with the objective of capacitating more professionals in the GBIF Participants, especially in their nodes and coordination offices;
8. **Knowledge dissemination** activities will be required from participants to ensure return of investment and maximum impact of training activities;
9. Information about **how to evaluate training** will be shared with the GBIF Nodes;
10. A similar survey will be repeated in 2012 to re-evaluate the training scenario.

Other comments and views on the results of this survey are welcome: please contact the GBIF Secretariat at training@gbif.org.

Summary of the answers

1.- Participation (Q1 & 2)

26 out of 98 GBIF Participant Nodes participated in the survey:

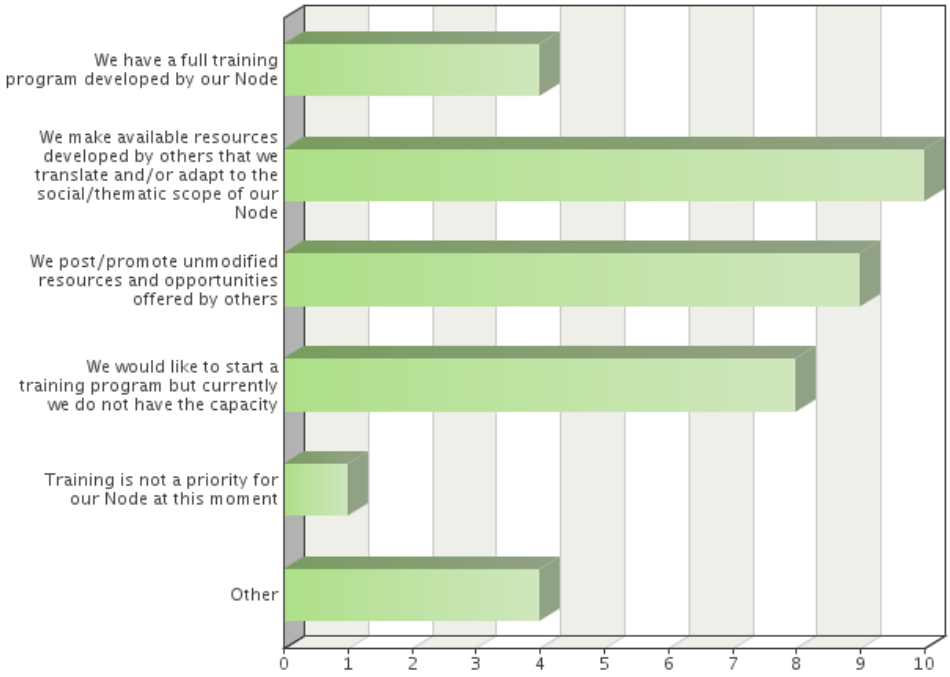
Argentina
Australia
Belgium
Benin
Burkina Faso (not completed)
Chinese Taipei
Colombia
Costa Rica
Endangered Wildlife Trust (EWT)
Equatorial Guinea
Finland
France
Germany
Guinea
India
Indonesia
Kenya
Republic of Korea
Madagascar
Mauritania
Netherlands
Nordic Genetic Resource Center (NORDGEN)
Philippines
South Africa
Spain
Togo
USA

26% of all the GBIF participants took part in this exercise. It sums up to 44% of all country participants, with representation from all GBIF regions and from both developing and developed countries. Representation from non-country Associate Participants was extremely low (2 out of 44).

Analysis:
Participation in the survey was not as high as expected despite being highlighted as a perfect opportunity for GBIF Nodes to express their views regarding training. However, it is important to take into account that a significant number of GBIF Participants did not have active nodes and some of them had not even appointed a Node Manager by the time the survey was done.
The wide spread of those who participated in the survey (both geographically and resources-wise) suggest that we can consider the results to be representative of the whole GBIF membership.
It was surprising to discover that Participants that have closely collaborated in training issues with the GBIF Secretariat in the past did not completed the survey (i.e. ICIMOD, ACB, ARCOS, SINEPAD).

2.- Involvement in training (Q3)

Question 3: To what extend is your Node involved in training?



Choices	Abs. freq.	Rel. freq.	Adj. rel. freq.
We have a full training program developed by our Node	4	11.11%	15.38%
We make available resources developed by others that we translate and/or adapt to the social/thematic scope of our Node	10	27.78%	38.46%
We post/promote unmodified resources and opportunities offered by others	9	25%	34.62%
We would like to start a training program but currently we do not have the capacity	8	22.22%	30.77%
Training is not a priority for our Node at this moment	1	2.78%	3.85%
Other	4	11.11%	15.38%
Sum:	36	100%	100%
Total answered: 26			

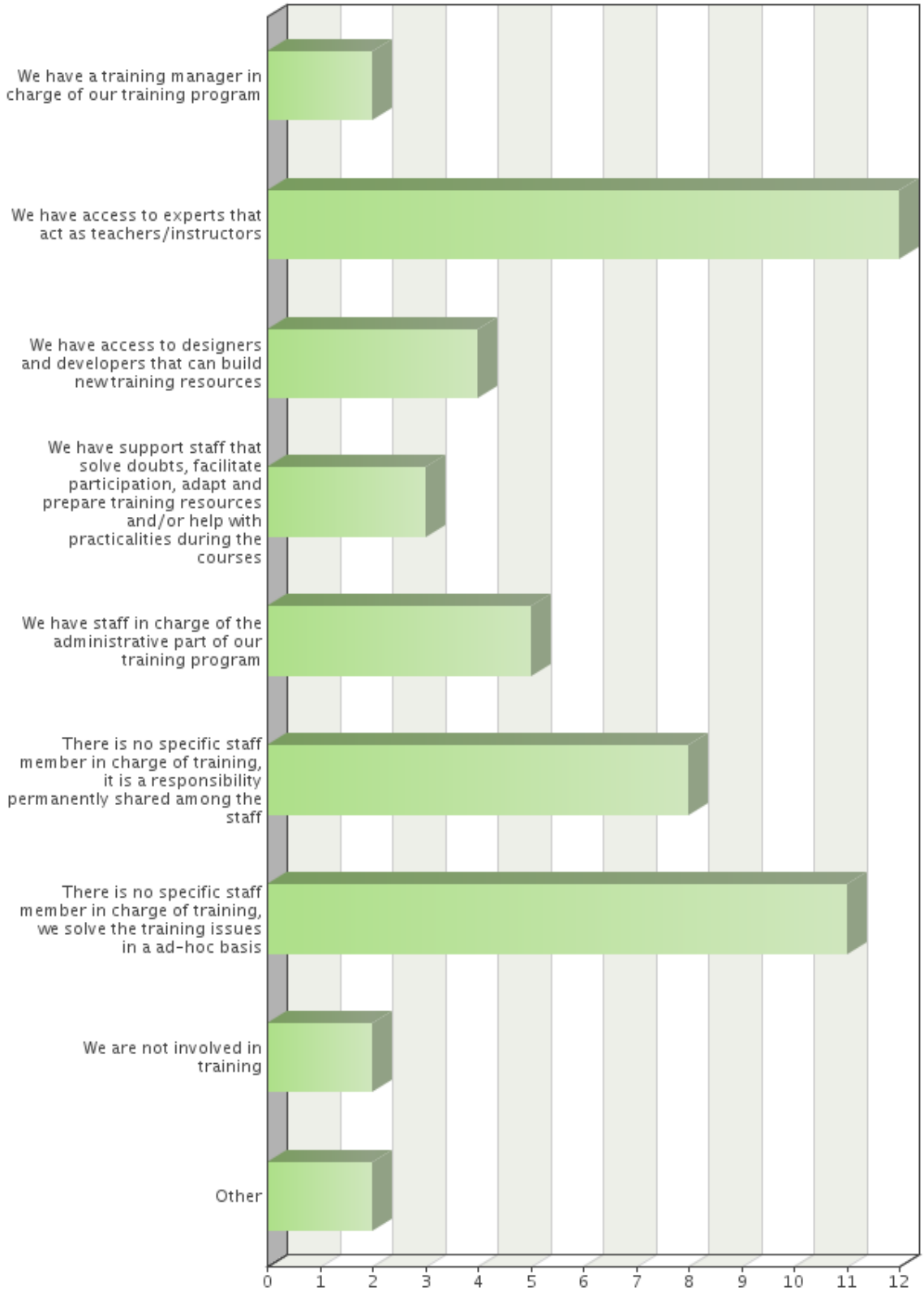
For practically all of those who answered the survey, training is considered relevant to a some extend. Most of them are not actively producing training resources and opportunities, but transforming existing materials or forwarding them unmodified to their constituency. Eight Participants would like to start training initiatives but they do not have the capacity.

Analysis:

This situation reinforces the importance of the GBIF Secretariat as a facilitator for the production of training materials and opportunities that Participants can reuse and distribute. It also highlights the importance of enabling easy discovery and access to the training resources available in the network.

3.- Human resources associated to training (Q4)

Question 4: In terms of human resources for training…



Choices	Abs. freq.	Rel. freq.	Adj. rel. freq.
We have a training manager in charge of our training program	2	4.08%	7.69%
We have access to experts that act as teachers/instructors	12	24.49%	46.15%
We have access to designers and developers that can build new training resources	4	8.16%	15.38%
We have support staff that solve doubts, facilitate participation, adapt and prepare training resources and/or help with practicalities during the courses	3	6.12%	11.54%
We have staff in charge of the administrative part of our training program	5	10.2%	19.23%
There is no specific staff member in charge of training, it is a responsibility permanently shared among the staff	8	16.33%	30.77%
There is no specific staff member in charge of training, we solve the training issues in a ad-hoc basis	11	22.45%	42.31%
We are not involved in training	2	4.08%	7.69%
Other	2	4.08%	7.69%
Sum:	49	100%	100%
Total answered: 26			

Only two nodes have staff specifically assigned to coordinate training activities. The rest of them share the responsibility among all the staff, many of them in an ad-hoc basis. Many of them have access to experts that could act as instructors, probably in the institutions that host the Nodes.

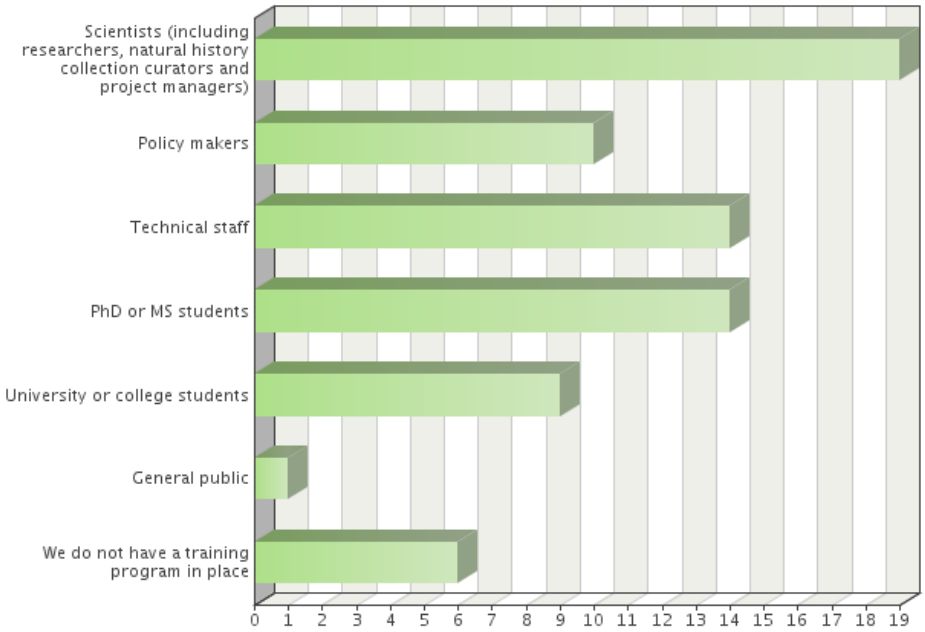
Analysis

The limited current human capacity in the nodes for training related activities recommends that future initiatives offered to them are ready-to-deploy and do not require extensive work for their adaptation by the nodes.

There is a good potential to work through the nodes to find experts to produce training resources, as they have access to those experts.

4.- Target audiences (Q5)

Question 5: Which of the following audience levels are targeted by your training program?



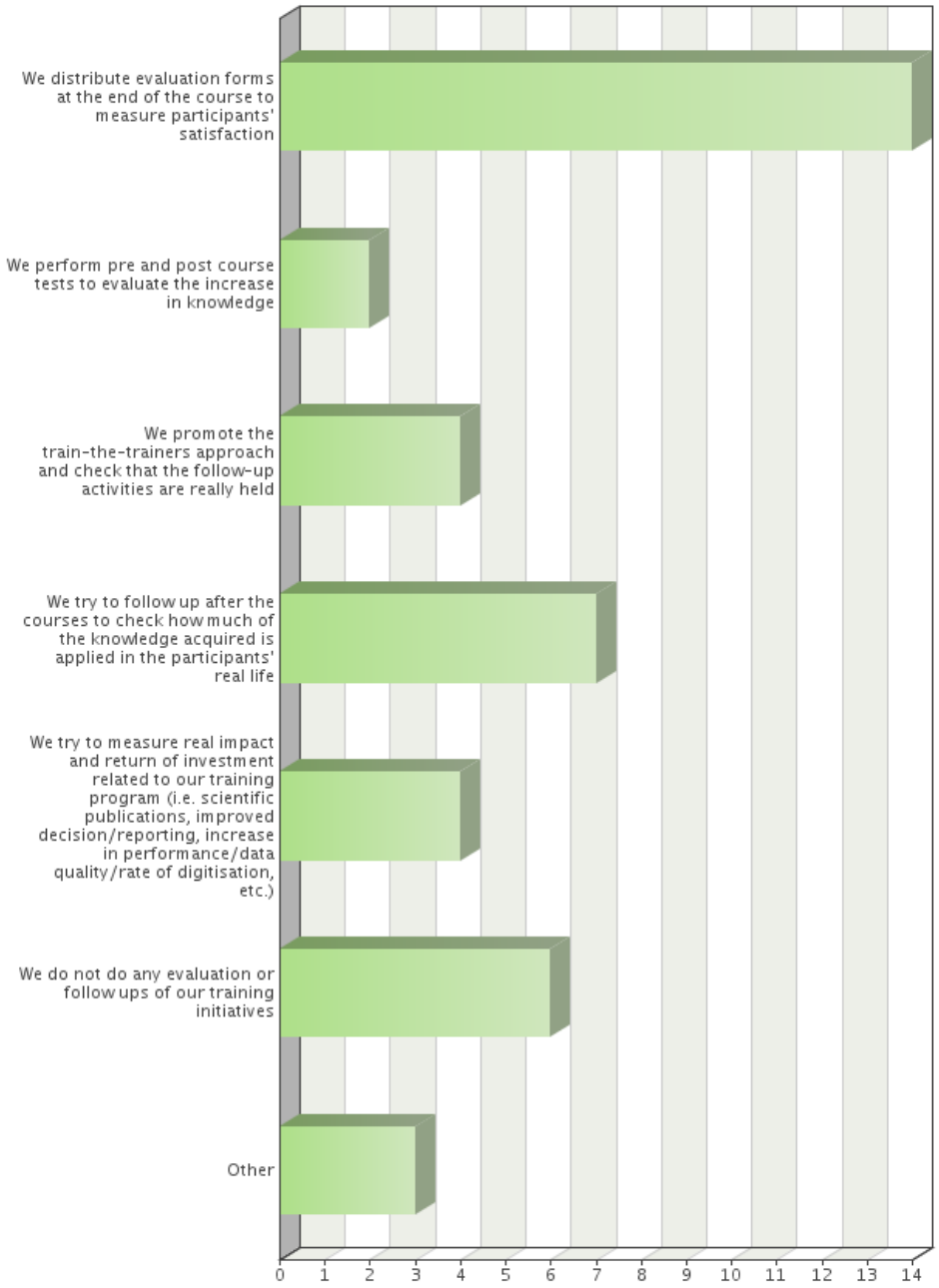
Choices	Abs. freq.	Rel. freq.	Adj. rel. freq.
Scientists (including researchers, natural history collection curators and project managers)	19	26.03%	73.08%
Policy makers	10	13.7%	38.46%
Technical staff	14	19.18%	53.85%
PhD or MS students	14	19.18%	53.85%
University or college students	9	12.33%	34.62%
General public	1	1.37%	3.85%
We do not have a training program in place	6	8.22%	23.08%
Sum:	73	100%	100%
Total answered: 26			

Most of the respondents (73%) identified the scientific community as their target public, together with technicians and PhD/MS students. A remarkable number also address their training initiatives to policy makers. Only one Participant have training initiatives addressed to the general public.

Analysis:
The main audience identified by nodes are scientist, technicians and post-college students, so training resources can assume a basic level of understanding of biodiversity and biodiversity informatics.
Training resources that are (also) addressed to policy makers should include or reference introductory materials to clarify complex concepts.
There is no need to open a work line addressed to the general public.

5.- Training evaluation (Q6)

Question 6: Which level of evaluation and/or follow-up do you apply in your training program?



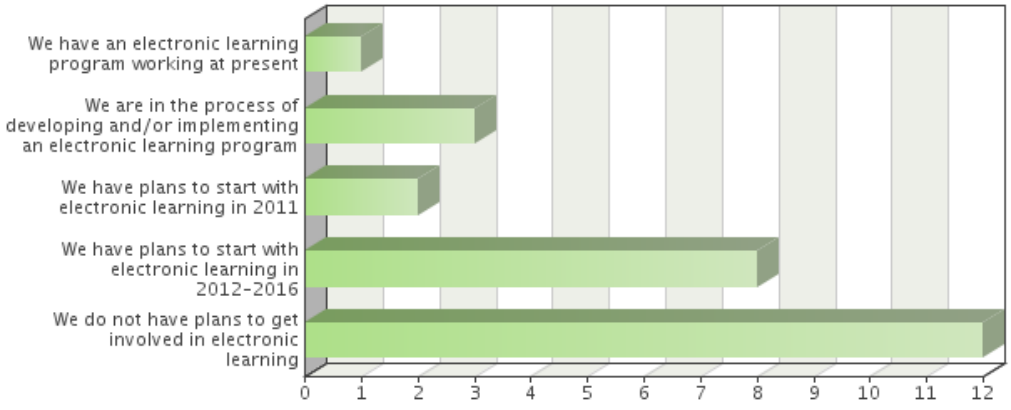
Choices	Abs. freq.	Rel. freq.	Adj. rel. freq.
We distribute evaluation forms at the end of the course to measure participants' satisfaction	14	35%	53.85%
We perform pre and post course tests to evaluate the increase in knowledge	2	5%	7.69%
We promote the train-the-trainers approach and check that the follow-up activities are really held	4	10%	15.38%
We try to follow up after the courses to check how much of the knowledge acquired is applied in the participants' real life	7	17.5%	26.92%
We try to measure real impact and return of investment related to our training program (i.e. scientific publications, improved decision/reporting, increase in performance/data quality/rate of digitisation, etc.)	4	10%	15.38%
We do not do any evaluation or follow ups of our training initiatives	6	15%	23.08%
Other	3	7.5%	11.54%
Sum:	40	100%	100%
Total answered: 26			

The most common (and nearly exclusive) method of evaluation that the nodes uses is evaluation forms at the end of their training events. Other evaluation methods are used by some nodes, always in reduced numbers.

Analysis:
The basic of evaluation and follow up that Nodes do of their training initiatives is consequent with the lack of training-specialised personnel identified in previous questions.
Most of the answers concentrate in just one kind of evaluation (immediate feedback). Nodes can thus benefit from further information/training on how to evaluate their training initiatives and demonstrate the return of investment of their training efforts.

6.- Plans on eLearning (Q7)

Question 7: What are your Node's plans with regards to electronic learning?



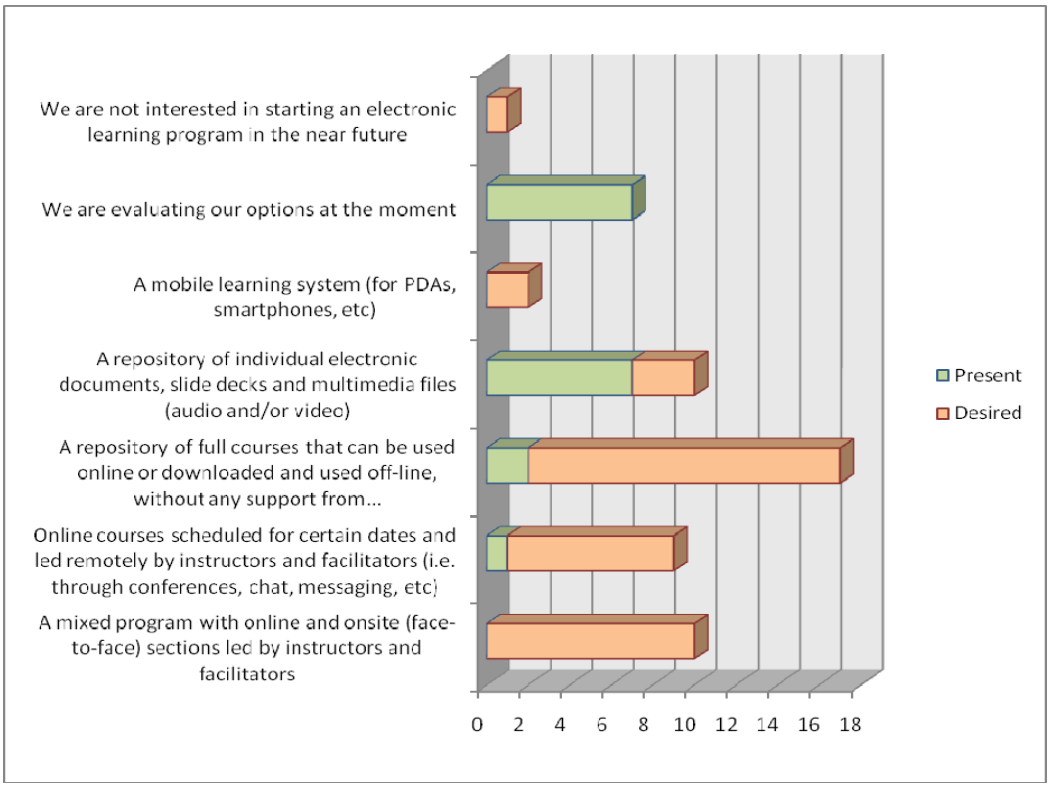
Choices	Abs. freq.	Rel. freq.	Adj. rel. freq.
We have an electronic learning program working at present	1	3.57%	3.85%
We are in the process of developing and/or implementing an electronic learning program	3	10.71%	11.54%
We have plans to start with electronic learning in 2011	2	7.14%	7.69%
We have plans to start with electronic learning in 2012-2016	8	28.57%	30.77%
We do not have plans to get involved in electronic learning	12	42.86%	46.15%
Sum:	26	100%	100%
Total answered: 26			

A very significant number of the respondents (20, a 77%) either do not have plans to start eLearning initiatives or their plans are in the long term. Only one has an electronic learning program in place.

Analysis:
Most of the respondents are NOT interested in deploying their own electronic learning facilities in the short term.

7.- Electronic training resources (Q8)

Question 8: Which type of electronic learning program does your Node have at the moment (if any)? Which type of electronic learning program do you plan to have in the future, taking into account the funds and human resources you have available?[1]



Choices	Present	Desired	Total
A mixed program with online and onsite (face-to-face) sections led by instructors and facilitators	0	10	10
Online courses scheduled for certain dates and led remotely by instructors and facilitators (i.e. through conferences, chat, messaging, etc)	1	8	9
A repository of full courses that can be used online or downloaded and used off-line, without any support from instructors/facilitators	2	15	17
A repository of individual electronic documents, slide decks and multimedia files (audio and/or video)	7	3	10
A mobile learning system (for PDAs, smartphones, etc)	0	2	2
We are evaluating our options at the moment	7		7
We are not interested in starting an electronic learning program in the near future	0	1	1
Sum:	17	39	56
Total answered: 26			

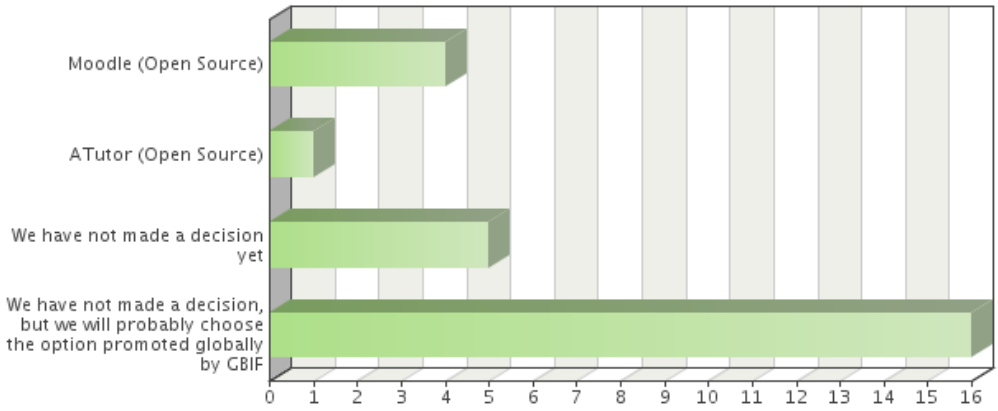
The current involvement in electronic learning in the GBIF nodes is very low. The most common set up is a repository of individual documents, and several of the nodes are evaluating their options at the moment. If they could choose, Nodes would prefer to serve complete courses that do not require supervision by instructors. As a second option, many of them would like to have synchronous education both online and onsite.

Analysis:
The current involvement of Nodes in eLearning and in the use of digital materials is low. Most of the respondents would like to have asynchronous courses that users can consume online or offline without further support, followed online and onsite synchronous training.

[1] There was a technical problem in the survey system and data related to this question had to be extracted manually.

8.- Learning Management Systems - LMS (Q9)

Question 9: If you have a Learning Management System in place or you plan to install one, which would be your preferred choice?



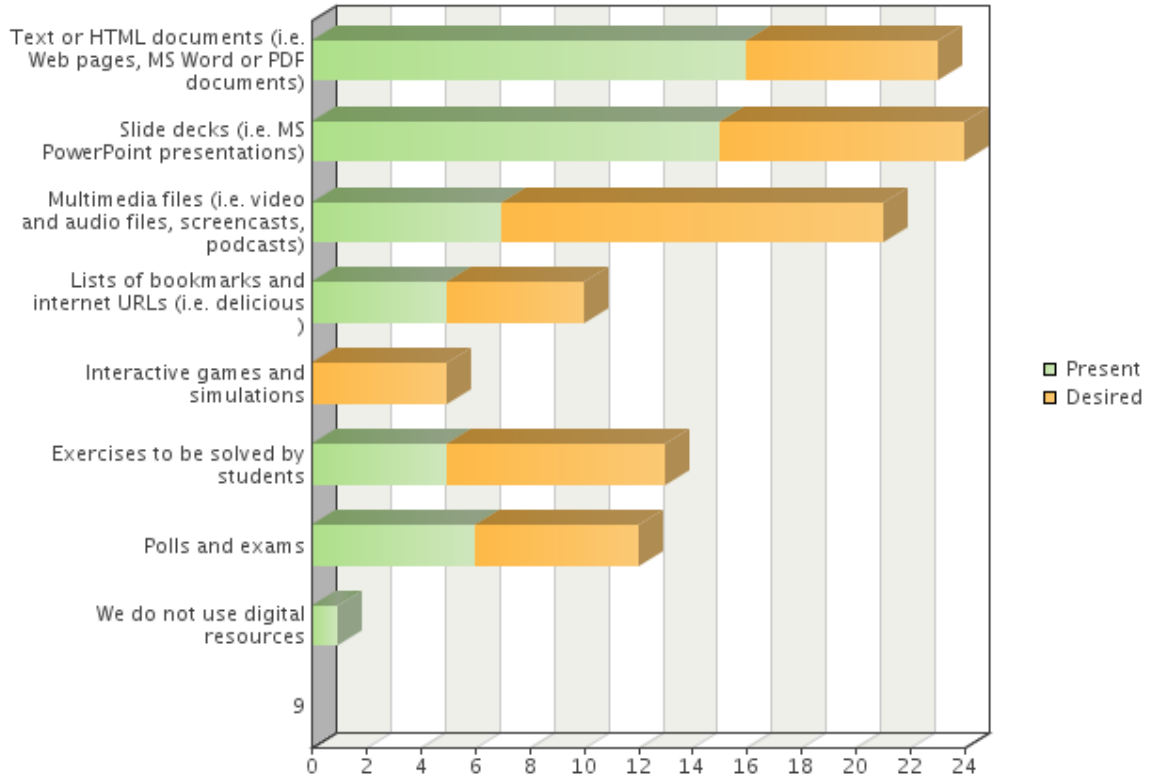
Choices	Abs. freq.	Rel. freq.	Adj. rel. freq.
Moodle (Open Source)	4	14.29%	15.38%
ATutor (Open Source)	1	3.57%	3.85%
We have not made a decision yet	5	17.86%	19.23%
We have not made a decision, but we will probably choose the option promoted globally by GBIF	16	57.14%	61.54%
Sum:	26	100%	100%
Total answered: 26			

21 participants (81% of the respondents) have not taken a decision regarding LMS. 16 among them would prefer the option promoted globally by GBIF. From those who have a preference regarding LMS, all of them could prefer Open Source platforms and the majority would prefer Moodle.

Analysis:
A significant amount of the participants would support the platform chosen globally by GBIF if they were in the position to install their own LMS. Very few have a strong preference on which system to use, being Moodle the most popular among them.

9.- Digital training resources (Q10)

Question 10: Which kinds of digital training resources do you usually use (even if not publicly available)? Which kinds would you like to use in the future?



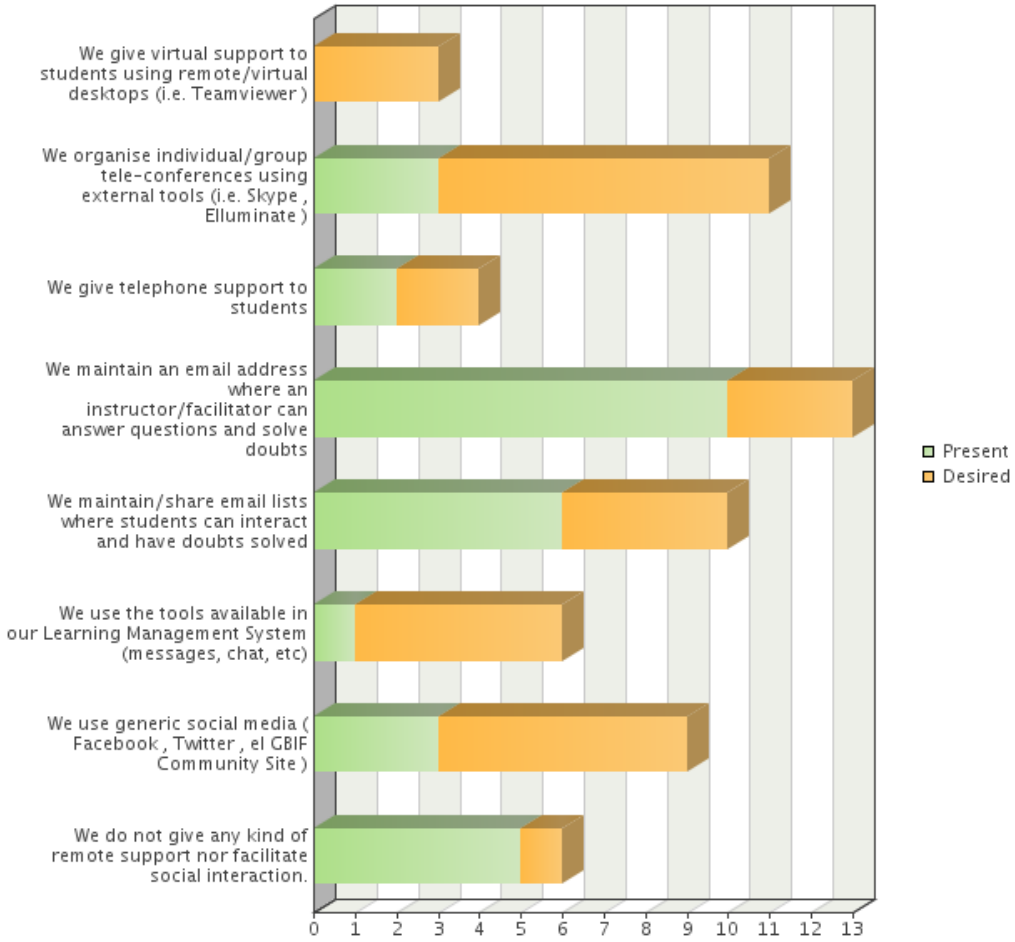
Choices	Present	Desired	Total
Text or HTML documents (i.e. Web pages, MS Word or PDF documents)	16	7	23
Slide decks (i.e. MS PowerPoint presentations)	15	9	24
Multimedia files (i.e. video and audio files, screencasts, podcasts)	7	14	21
Lists of bookmarks and internet URLs (i.e. delicious)	5	5	10
Interactive games and simulations	0	5	5
Exercises to be solved by students	5	8	13
Polls and exams	6	6	12
We do not use digital resources	1	0	1
Sum:	55	54	109
Total answered: 25			

The most popular digital formats for training materials are text documents and slide decks, followed by far by other formats such as multimedia, practical exercises or simulations.
Multimedia files are certainly the preferred way forward by most Node managers, although there is still interest in all the other formats.

Analysis:
Node managers are interested in digital resources, but they are currently using them at a basic level (text and slides). They would like to move to multimedia files if given the choice.

10.- Online Social Networking (Q11)

Question 11: Regarding social interaction and support related to training…



Choices	Present	Desired	Total
We give virtual support to students using remote/virtual desktops (i.e. Teamviewer)	0	3	3
We organise individual/group tele-conferences using external tools (i.e. Skype , Elluminate)	3	8	11
We give telephone support to students	2	2	4
We maintain an email address where an instructor/facilitator can answer questions and solve doubts	10	3	13
We maintain/share email lists where students can interact and have doubts solved	6	4	10
We use the tools available in our Learning Management System (messages, chat, etc)	1	5	6
We use generic social media (Facebook , Twitter , el GBIF Community Site)	3	6	9
We do not give any kind of remote support nor facilitate social interaction.	5	1	6
Sum:	30	32	62
Total answered: 25			

At present support to participants is channelled mainly through individual or group interaction via email. The use of other communication media and support channels is kept quite low at present.
In terms of what the Nodes would like to use in the future, teleconferences are the most demanded system. The interest in online social networking tools is moderate.

Analysis:
The respondent GBIF nodes haven't exploited the full potential of collaboration among the participants in their training initiatives through the use of social media.
Current solutions (single mail address or a mailing lists) are probably causing a bottleneck that is hampering potential collaboration and support by the recipients of the training.

11.- Barriers for electronic learning (Q 12)

Question 12: Do you foresee any barrier to the implementation of electronic learning by your Node? (open question)

The barriers identified by nodes that could hamper the development of electronic learning are (sorted by importance):

1. Lack of adequate internet access - 10 respondents.
2. Lack of (capacitated) human resources - 9 respondents.
3. Lack of electric supply - 6 respondents.

4a. Technical resources - 3 respondents.

4b. Lack of interest by the community or the node - 3 respondents.

5. Language issues - 1 respondent.

The answers to this question reveals that GBIF nodes face many important capacity and resource constraints that block their attempts to develop training initiatives. The lack of capacitated human resources is highlighted again here.
An alarming number of respondents identify the lack of adequate internet access or/and electric supply as a barrier.

Analysis:
It is important to continue the capacity building efforts that allow GBIF Nodes staff members to acquire the knowledge on how to lead electronic learning initiatives.
Giving a solution to the lack of staff and technical means (including stable supply of electricity and internet access) fall out of the scope of this report, but it can be mitigated with the design of light training materials that does not require high internet bandwidth, and ensure that resources can be used offline to the furthest extend possible.

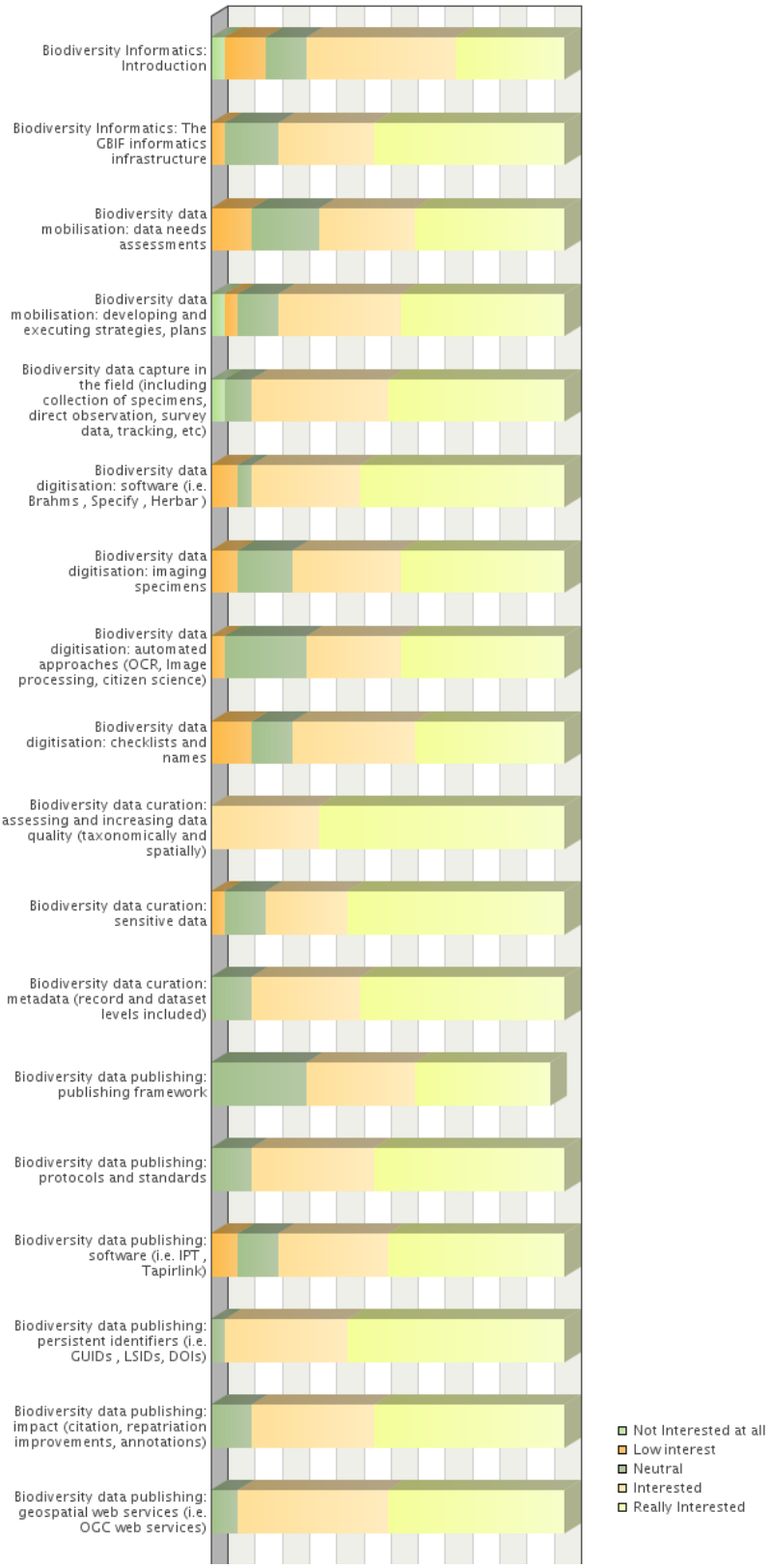
12.- Other comments regarding electronic learning (Q13)

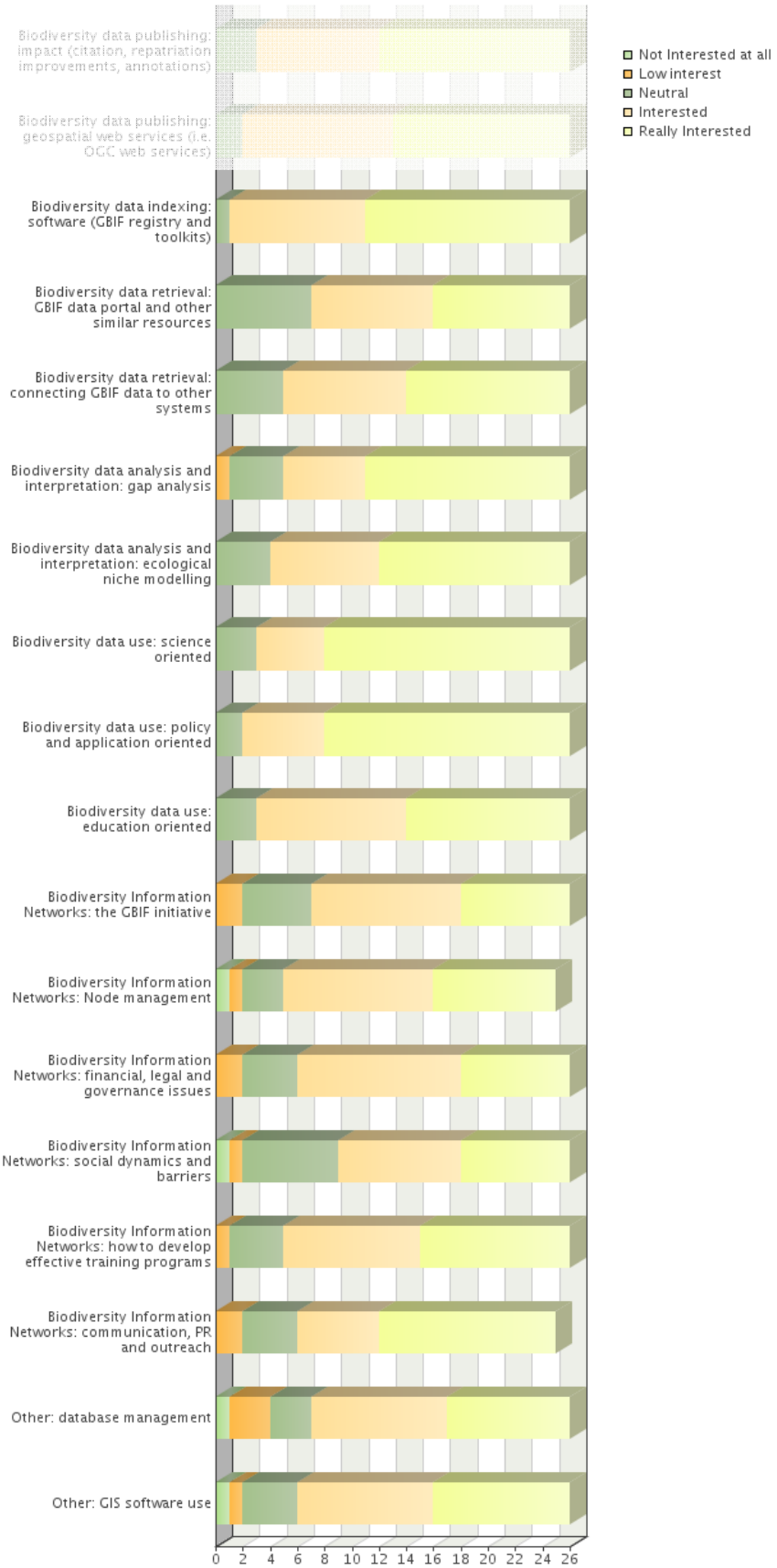
Question 13: Other comments regarding electronic learning (open question)

Other comments by the respondents include:

- Collaboration must be sought with universities and other centres to avoid competition;
- The possibility of using electronic learning as a complement of on-site training as a way reviewing the knowledge should be studied;
- Several respondents support eLearning, but they state that now they lack the capacity to start and eLearning program. They could promote existing resources for the time being;
- eLearning can be effective if complemented by other approaches.

13.- Training topics prioritisation for nodes to RECEIVE training (Q14)




Biodiversity data publishing: impact (citation, repatriation improvements, annotations)
Biodiversity data publishing: geospatial web services (i.e. OGC web services)
Biodiversity data indexing: software (GBIF registry and toolkits)
Biodiversity data retrieval: GBIF data portal and other similar resources
Biodiversity data retrieval: connecting GBIF data to other systems
Biodiversity data analysis and interpretation: gap analysis
Biodiversity data analysis and interpretation: ecological niche modelling
Biodiversity data use: science oriented
Biodiversity data use: policy and application oriented
Biodiversity data use: education oriented
Biodiversity Information Networks: the GBIF initiative
Biodiversity Information Networks: Node management
Biodiversity Information Networks: financial, legal and governance issues
Biodiversity Information Networks: social dynamics and barriers
Biodiversity Information Networks: how to develop effective training programs
Biodiversity Information Networks: communication, PR and outreach
Other: database management
Other: GIS software use
Not Interested at all
Low interest
Neutral
Interested
Really Interested
0 2 4 6 8 10 12 14 16 18 20 22 24 26

Question 14: Could you rate the interest of your Node in RECEIVING training on the following topics?

Table with raw data:

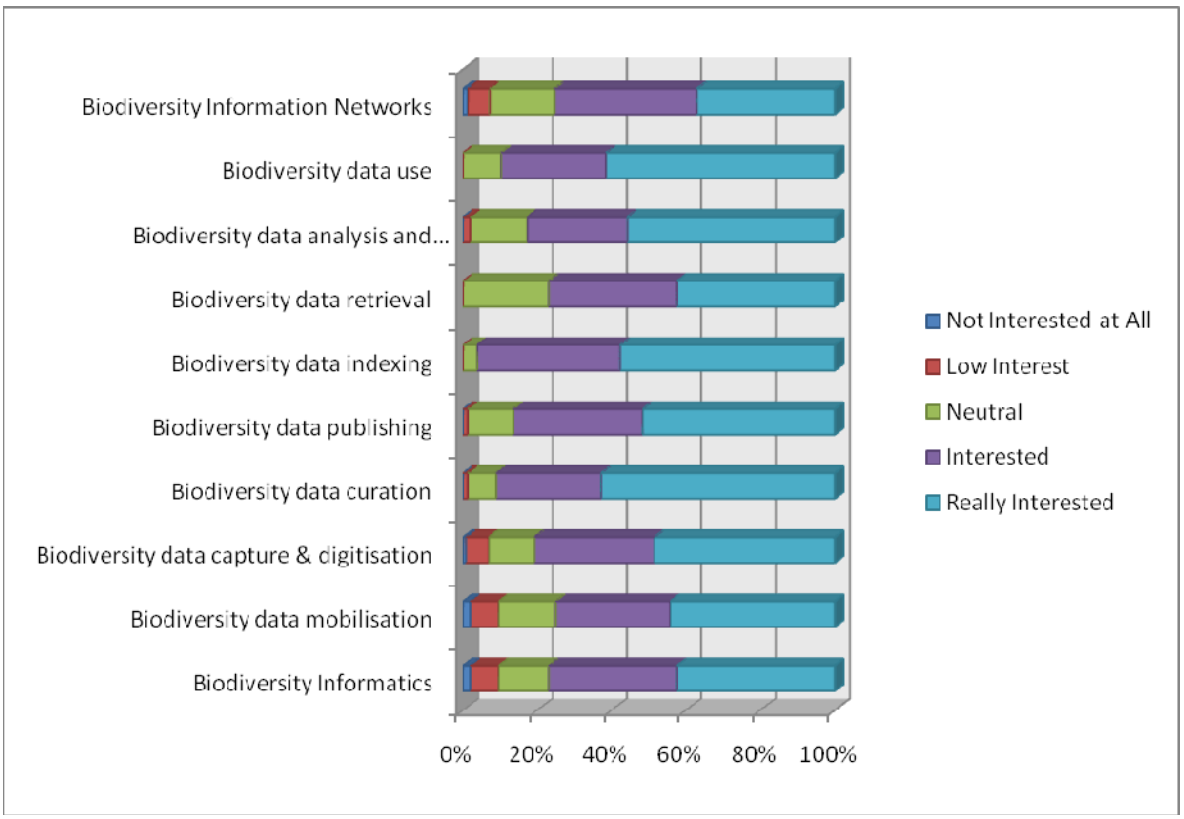
Choices	Not interested at all	Low Interest	Neutral	Interested	Really Interested
Biodiversity Informatics: Introduction	1	3	3	11	8
Biodiversity Informatics: The GBIF informatics infrastructure	0	1	4	7	14
Biodiversity data mobilisation: data needs assessments	0	3	5	7	11
Biodiversity data mobilisation: developing and executing strategies, plans	1	1	3	9	12
Biodiversity data capture in the field (including collection of specimens, direct observation, survey data, tracking, etc)	1	0	2	10	13
Biodiversity data digitisation: software (i.e. Brahms , Specify , Herbar)	0	2	1	8	15
Biodiversity data digitisation: imaging specimens	0	2	4	8	12
Biodiversity data digitisation: automated approaches (OCR, Image processing, citizen science)	0	1	6	7	12
Biodiversity data digitisation: checklists and names	0	3	3	9	11
Biodiversity data curation: assessing and increasing data quality (taxonomically and spatially)	0	0	0	8	18
Biodiversity data curation: sensitive data	0	1	3	6	16
Biodiversity data curation: metadata (record and dataset levels included)	0	0	3	8	15
Biodiversity data publishing: publishing framework	0	0	7	8	10
Biodiversity data publishing: protocols and standards	0	0	3	9	14
Biodiversity data publishing: software (i.e. IPT , Tapirlink)	0	2	3	8	13
Biodiversity data publishing: persistent identifiers (i.e. GUIDs , LSIDs, DOIs)	0	0	1	9	16
Biodiversity data publishing: impact (citation, repatriation improvements, annotations)	0	0	3	9	14
Biodiversity data publishing: geospatial web services (i.e. OGC web services)	0	0	2	11	13
Biodiversity data indexing: software (GBIF registry and toolkits)	0	0	1	10	15
Biodiversity data retrieval: GBIF data portal and other similar resources	0	0	7	9	10
Biodiversity data retrieval: connecting GBIF data to other systems	0	0	5	9	12
Biodiversity data analysis and interpretation: gap analysis	0	1	4	6	15
Biodiversity data analysis and interpretation: ecological niche modelling	0	0	4	8	14
Biodiversity data use: science oriented	0	0	3	5	18
Biodiversity data use: policy and application oriented	0	0	2	6	18
Biodiversity data use: education oriented	0	0	3	11	12
Biodiversity Information Networks: the GBIF initiative	0	2	5	11	8
Biodiversity Information Networks: Node management	1	1	3	11	9
Biodiversity Information Networks: financial, legal and governance issues	0	2	4	12	8
Biodiversity Information Networks: social dynamics and barriers	1	1	7	9	8
Biodiversity Information Networks: how to develop effective training programs	0	1	4	10	11
Biodiversity Information Networks: communication, PR and outreach	0	2	4	6	13
Other: database management	1	3	3	10	9
Other: GIS software use	1	1	4	10	10
Sum	7	33	119	295	427

The following tables show the topics that have achieved the highest scores in the columns showing positive interest by the nodes for easier analysis.

Top 10 topics Ordered by score in *Interested* + *Really Interested*	
Biodiversity data curation: assessing and increasing data quality (taxonomically and spatially)	26
Biodiversity data publishing: persistent identifiers (i.e. GUIDs , LSIDs, DOIs)	25
Biodiversity data indexing: software (GBIF registry and toolkits)	25
Biodiversity data publishing: geospatial web services (i.e. OGC web services)	24
Biodiversity data use: policy and application oriented	24
Biodiversity data capture in the field (including collection of specimens, direct observation, survey data, tracking, etc)	23
Biodiversity data digitisation: software (i.e. Brahms , Specify , Herbar)	23
Biodiversity data curation: metadata (record and dataset levels included)	23
Biodiversity data publishing: protocols and standards	23
Biodiversity data publishing: impact (citation, repatriation improvements, annotations)	23
Biodiversity data use: science oriented	23

Top 10 topics ordered by score in *Really Interested*	
Biodiversity data curation: assessing and increasing data quality (taxonomically and spatially)	18
Biodiversity data use: science oriented	18
Biodiversity data use: policy and application oriented	18
Biodiversity data curation: sensitive data	16
Biodiversity data publishing: persistent identifiers (i.e. GUIDs , LSIDs, DOIs)	16
Biodiversity data digitisation: software (i.e. Brahms , Specify , Herbar)	15
Biodiversity data curation: metadata (record and dataset levels included)	15
Biodiversity data indexing: software (GBIF registry and toolkits)	15
Biodiversity data analysis and interpretation: gap analysis	15
Biodiversity Informatics: The GBIF informatics infrastructure	14
Biodiversity data publishing: protocols and standards	14

Aggregated view[2]:



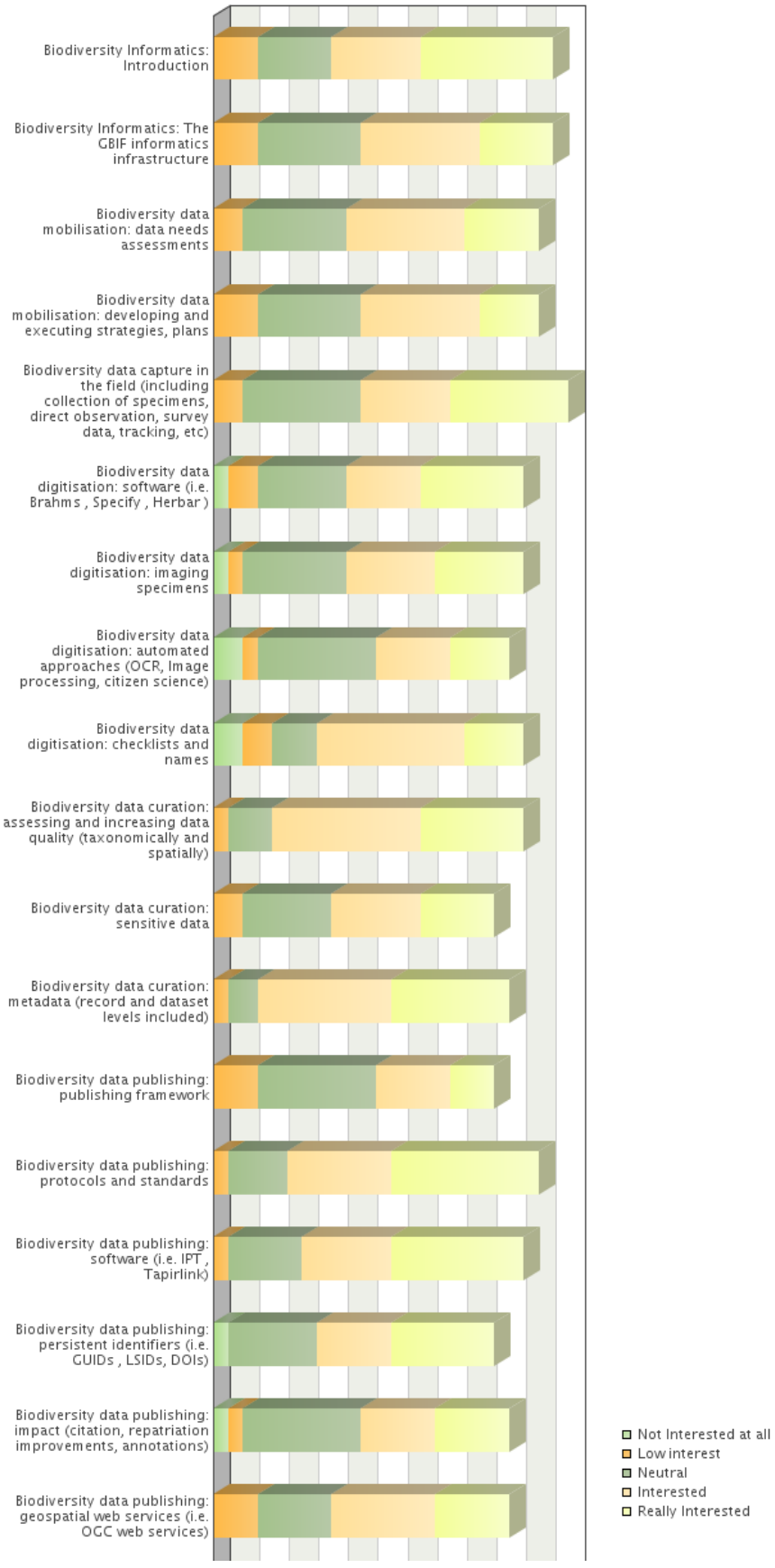
Choices	Not Interested at All	Low Interest	Neutral	Interested	Really Interested
Biodiversity Informatics	0.5	2	3.5	9	11
Biodiversity data mobilisation	0.5	2	4	8	11.5
Biodiversity data capture & digitisation	0.2	1.6	3.2	8.4	12.6
Biodiversity data curation	0	0.3	2	7. 3	16.3
Biodiversity data publishing	0	0.3	3.2	9	13.3
Biodiversity data indexing	0	0	1	10	15
Biodiversity data retrieval	0	0	6	9	11
Biodiversity data analysis and interpretation	0	0.5	4	7	14.5
Biodiversity data use	0	0	2.7	7. 3	16
Biodiversity Information Networks	0.3	1.5	4.5	9.8	9.5

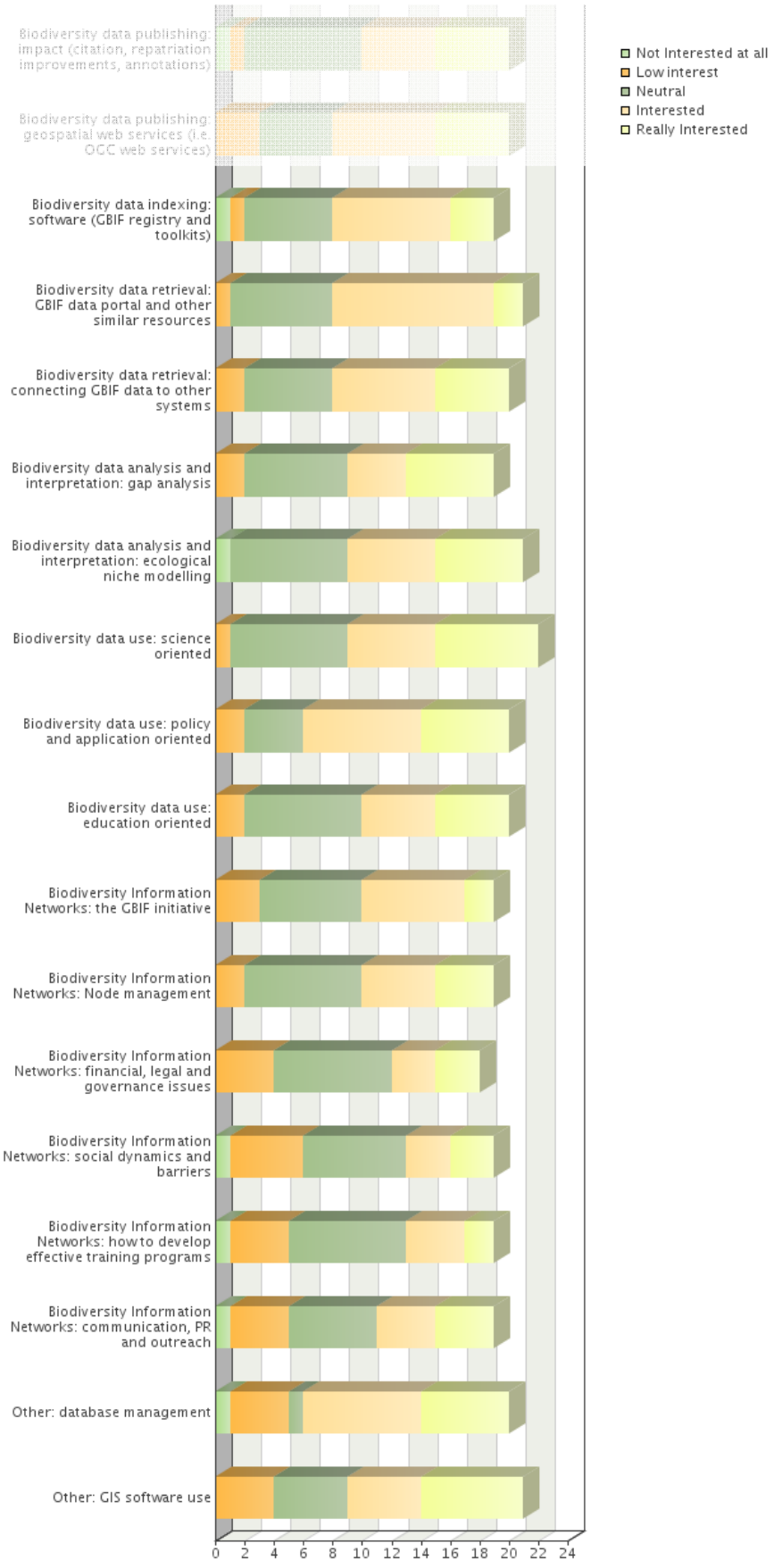
The preferences expressed by the GBIF Nodes on what they would like to receive training about are very diverse, spread on all the GBIF-related topics offered to them in the survey and most of them marked as 'Interested' or 'Really interested'. No topic stands as a clear priority nor to be excluded. This probably reflects somehow the different state of development in which the respondents are as GBIF Nodes.
If some topics have to be selected as prioritised from the list, data curation (assessing and increasing data quality in particular), data use, data indexing and unique identifiers (LSIDs) are the four more relevant ones.
Analysis of the aggregated view confirms the interest on data indexing, curation and use.

Analysis:
The needs of the nodes regarding receiving training are very diverse, as a reflection of a very diverse network. Some of the highlights are data curation, indexing, publishing and use.

[2] The values in this table were obtained calculating the arithmetic mean of the values assigned to all subcategories under each category.

14.- Training topics prioritisation for nodes to DELIVER training (Q15)




Biodiversity data publishing: impact (citation, repatriation improvements, annotations)
Biodiversity data publishing: geospatial web services (i.e. OGC web services)
Biodiversity data indexing: software (GBIF registry and toolkits)
Biodiversity data retrieval: GBIF data portal and other similar resources
Biodiversity data retrieval: connecting GBIF data to other systems
Biodiversity data analysis and interpretation: gap analysis
Biodiversity data analysis and interpretation: ecological niche modelling
Biodiversity data use: science oriented
Biodiversity data use: policy and application oriented
Biodiversity data use: education oriented
Biodiversity Information Networks: the GBIF initiative
Biodiversity Information Networks: Node management
Biodiversity Information Networks: financial, legal and governance issues
Biodiversity Information Networks: social dynamics and barriers
Biodiversity Information Networks: how to develop effective training programs
Biodiversity Information Networks: communication, PR and outreach
Other: database management
Other: GIS software use
Not Interested at all
Low interest
Neutral
Interested
Really Interested
0 2 4 6 8 10 12 14 16 18 20 22 24

Question 15: Could you rate the interest of your Node in DELIVERING training on the following topics?

Table with raw data:

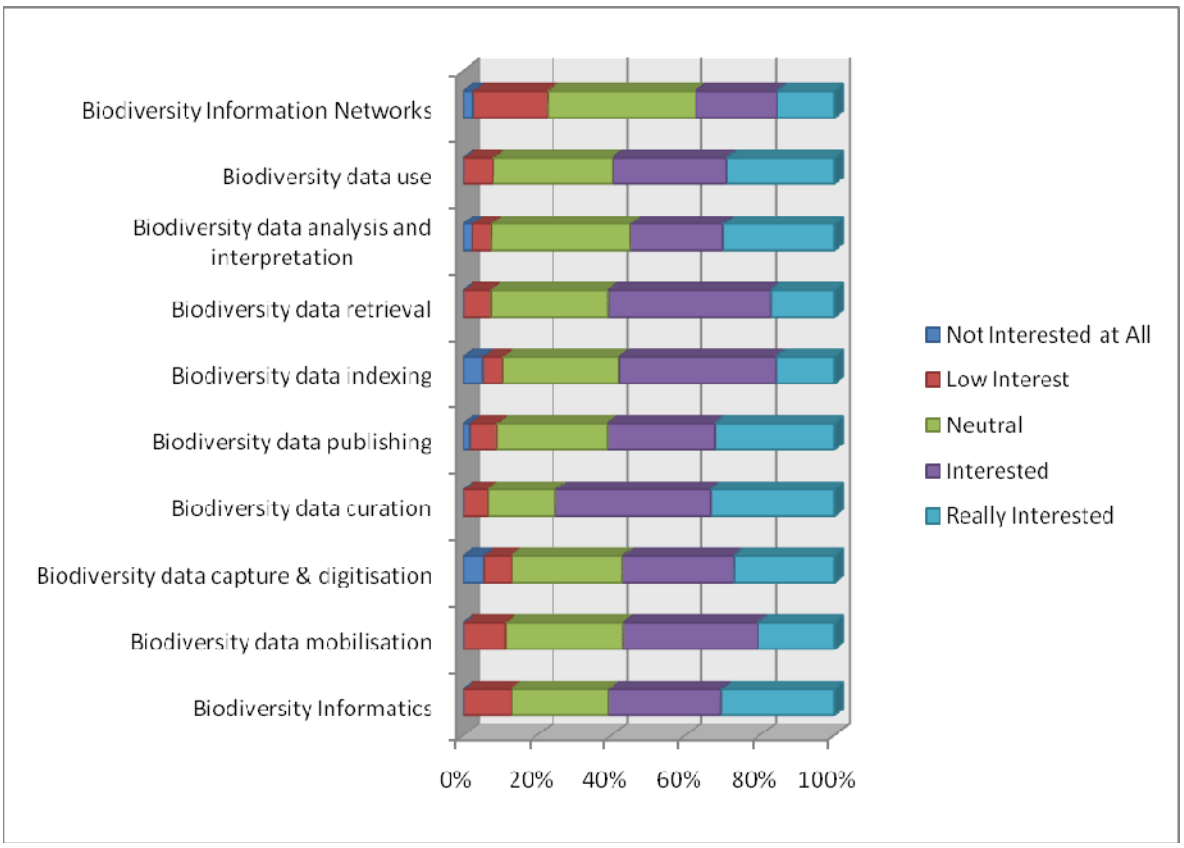
Choices	Not interested at all	Low Interest	Neutral	Interested	Really Interested
Biodiversity Informatics: Introduction	0	3	5	6	9
Biodiversity Informatics: The GBIF informatics infrastructure	0	3	7	8	5
Biodiversity data mobilisation: data needs assessments	0	2	7	8	5
Biodiversity data mobilisation: developing and executing strategies, plans	0	3	7	8	4
Biodiversity data capture in the field (including collection of specimens, direct observation, survey data, tracking, etc)	0	2	8	6	8
Biodiversity data digitisation: software (i.e. Brahms , Specify , Herbar)	1	2	6	5	7
Biodiversity data digitisation: imaging specimens	1	1	7	6	6
Biodiversity data digitisation: automated approaches (OCR, Image processing, citizen science)	2	1	8	5	4
Biodiversity data digitisation: checklists and names	2	2	3	10	4
Biodiversity data curation: assessing and increasing data quality (taxonomically and spatially)	0	1	3	10	7
Biodiversity data curation: sensitive data	0	2	6	6	5
Biodiversity data curation: metadata (record and dataset levels included)	0	1	2	9	8
Biodiversity data publishing: publishing framework	0	3	8	5	3
Biodiversity data publishing: protocols and standards	0	1	4	7	10
Biodiversity data publishing: software (i.e. IPT , Tapirlink)	0	1	5	6	9
Biodiversity data publishing: persistent identifiers (i.e. GUIDs , LSIDs, DOIs)	1	0	6	5	7
Biodiversity data publishing: impact (citation, repatriation improvements, annotations)	1	1	8	5	5
Biodiversity data publishing: geospatial web services (i.e. OGC web services)	0	3	5	7	5
Biodiversity data indexing: software (GBIF registry and toolkits)	1	1	6	8	3
Biodiversity data retrieval: GBIF data portal and other similar resources	0	1	7	11	2
Biodiversity data retrieval: connecting GBIF data to other systems	0	2	6	7	5
Biodiversity data analysis and interpretation: gap analysis	0	2	7	4	6
Biodiversity data analysis and interpretation: ecological niche modelling	1	0	8	6	6
Biodiversity data use: science oriented	0	1	8	6	7
Biodiversity data use: policy and application oriented	0	2	4	8	6
Biodiversity data use: education oriented	0	2	8	5	5
Biodiversity Information Networks: the GBIF initiative	0	3	7	7	2
Biodiversity Information Networks: Node management	0	2	8	3	3
Biodiversity Information Networks: financial, legal and governance issues	0	4	8	3	3
Biodiversity Information Networks: social dynamics and barriers	1	5	7	3	3
Biodiversity Information Networks: how to develop effective training programs	1	4	8	4	2
Biodiversity Information Networks: communication, PR and outreach	1	4	6	4	4
Other: database management	1	4	1	8	6
Other: GIS software use	0	4	5	5	7
Sum	14	73	209	216	182

The following tables show the topics that have achieved the highest scores in the columns showing positive interest by the nodes, for easier analysis.

Top 10 topics Ordered by score in *Interested* + *Really Interested*	
Biodiversity data curation: assessing and increasing data quality (taxonomically and spatially)	17
Biodiversity data curation: metadata (record and dataset levels included)	17
Biodiversity data publishing: protocols and standards	17
Biodiversity Informatics: Introduction	15
Biodiversity data publishing: software (i.e. IPT , Tapirlink)	15
Biodiversity data capture in the field (including collection of specimens, direct observation, survey data, tracking, etc)	14
Biodiversity data digitisation: checklists and names	14
Biodiversity data use: policy and application oriented	14
Other: database management	14
Biodiversity Informatics: The GBIF informatics infrastructure	13
Biodiversity data mobilisation: data needs assessments	13

Top 10 Topics ordered by score in *Really Interested*	
Biodiversity data publishing: protocols and standards	10
Biodiversity Informatics: Introduction	9
Biodiversity data publishing: software (i.e. IPT , Tapirlink)	9
Biodiversity data capture in the field (including collection of specimens, direct observation, survey data, tracking, etc)	8
Biodiversity data curation: metadata (record and dataset levels included)	8
Biodiversity data digitisation: software (i.e. Brahms , Specify , Herbar)	7
Biodiversity data curation: assessing and increasing data quality (taxonomically and spatially)	7
Biodiversity data publishing: persistent identifiers (i.e. GUIDs , LSIDs, DOIs)	7
Biodiversity data use: science oriented	7
Other: GIS software use	7
Biodiversity data digitisation: imaging specimens	6

Aggregated view[3]:



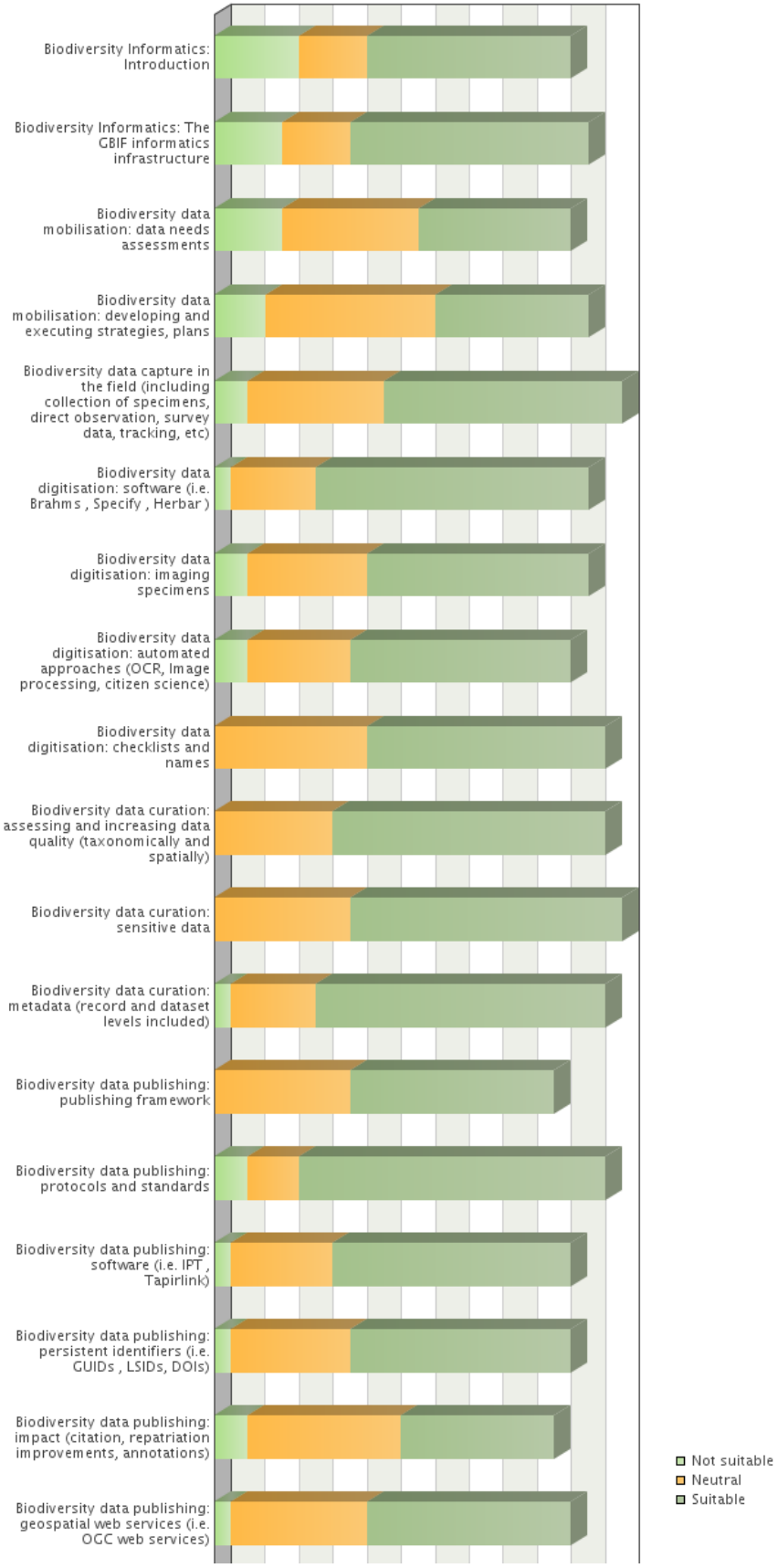
Choices	Not Interested at All	Low Interest	Neutral	Interested	Really Interested
Biodiversity Informatics	0	3	6	7	7
Biodiversity data mobilisation	0	2.5	7	8	4.5
Biodiversity data capture & digitisation	1.2	1.6	6.4	6.4	5.8
Biodiversity data curation	0	1.3	3.7	8. 3	6.7
Biodiversity data publishing	0.3	1.5	6	5. 3	6.5
Biodiversity data indexing	1	1	6	8	3
Biodiversity data retrieval	0	1.5	6.5	9	3.5
Biodiversity data analysis and interpretation	0.5	1	7.5	5	6
Biodiversity data use	0	1.7	6.7	6. 3	6
Biodiversity Information Networks	0.5	3.7	7.3	4	2.8

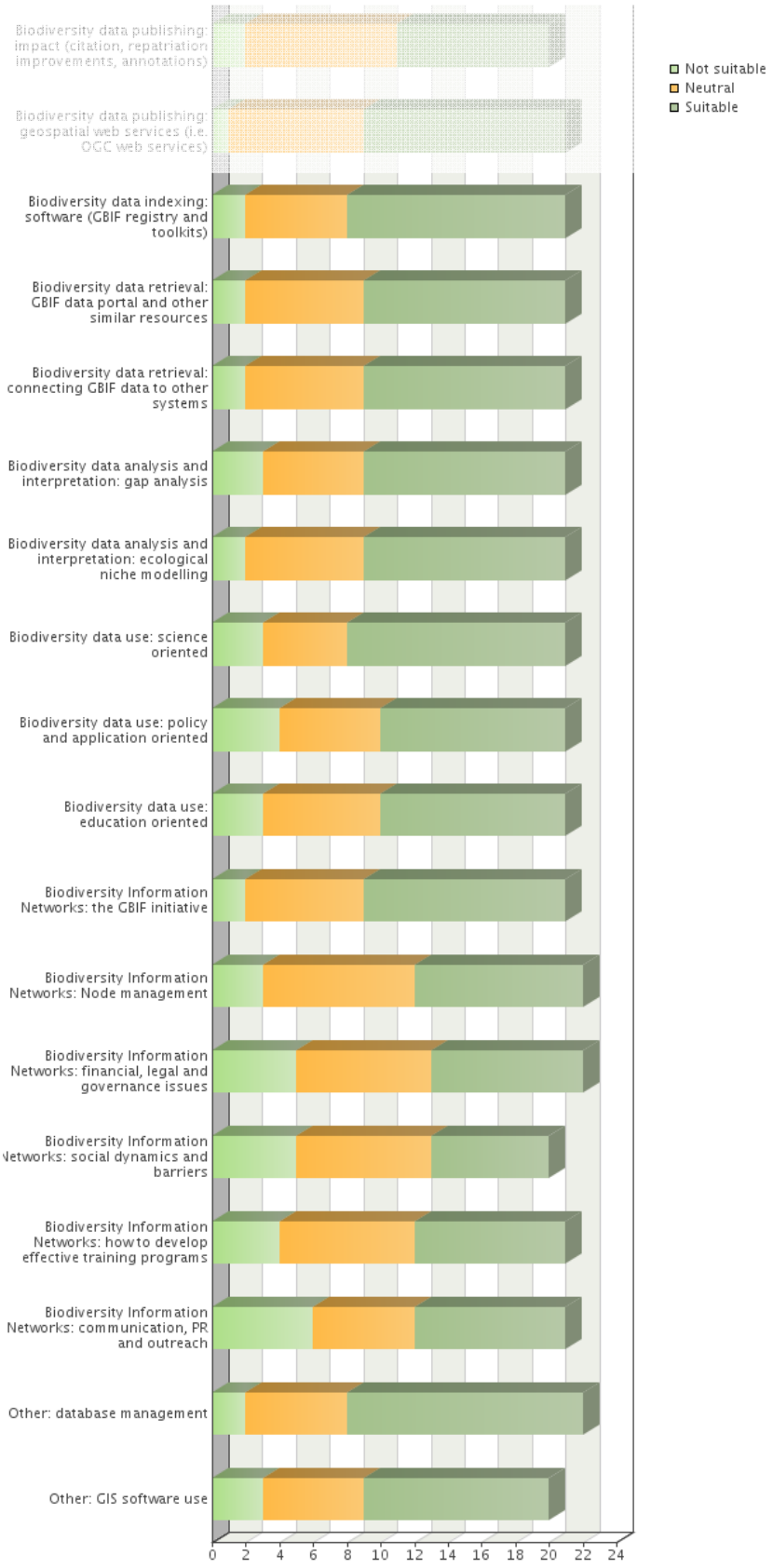
If we talk about preferences by the nodes when delivering training, the diversity continues, although many more topics are marked as 'neutral'. This may reflect a preference by the respondents on receiving training rather than delivering training.
Data curation (and data quality) is again identified as the most demanded topic, followed very close by training about protocols and standards, and metadata. Data publishing and data collection are also marked as relevant.
The aggregated view confirms again that data curation is a priority for the nodes to deliver training about, while the preferences in all the other areas are more diluted.

Analysis:
GBIF Nodes have more interest in receiving training rather than delivering training to their communities. When doing it, data curation is a clear priority, followed by generic introductions to biodiversity informatics and training about protocols and standards, metadata, data publishing and use.

[3] The values in this table were obtained calculating the arithmetic mean of the values assigned to all subcategories under each category.

15.- Adaptation to training resources to eLearning (Q16)




Biodiversity data publishing: impact (citation, repatriation improvements, annotations)
Biodiversity data publishing: geospatial web services (i.e. OGC web services)
Biodiversity data indexing: software (GBIF registry and toolkits)
Biodiversity data retrieval: GBIF data portal and other similar resources
Biodiversity data retrieval: connecting GBIF data to other systems
Biodiversity data analysis and interpretation: gap analysis
Biodiversity data analysis and interpretation: ecological niche modelling
Biodiversity data use: science oriented
Biodiversity data use: policy and application oriented
Biodiversity data use: education oriented
Biodiversity Information Networks: the GBIF initiative
Biodiversity Information Networks: Node management
Biodiversity Information Networks: financial, legal and governance issues
Biodiversity Information Networks: social dynamics and barriers
Biodiversity Information Networks: how to develop effective training programs
Biodiversity Information Networks: communication, PR and outreach
Other: database management
Other: GIS software use
Not suitable
Neutral
Suitable
0 2 4 6 8 10 12 14 16 18 20 22 24

Question 16: Which of these topics do you consider suitable/desirable to be offered through electronic learning?

Choices	Not suitable	Neutral	Suitable
Biodiversity Informatics: Introduction	5	4	12
Biodiversity Informatics: The GBIF informatics infrastructure	4	4	14
Biodiversity data mobilisation: data needs assessments	4	8	9
Biodiversity data mobilisation: developing and executing strategies, plans	3	10	9
Biodiversity data capture in the field (including collection of specimens, direct observation, survey data, tracking, etc)	2	8	14
Biodiversity data digitisation: software (i.e. Brahms , Specify , Herbar)	1	5	16
Biodiversity data digitisation: imaging specimens	2	7	13
Biodiversity data digitisation: automated approaches (OCR, Image processing, citizen science)	2	6	13
Biodiversity data digitisation: checklists and names	0	9	14
Biodiversity data curation: assessing and increasing data quality (taxonomically and spatially)	0	7	16
Biodiversity data curation: sensitive data	0	8	16
Biodiversity data curation: metadata (record and dataset levels included)	1	5	17
Biodiversity data publishing: publishing framework	0	8	12
Biodiversity data publishing: protocols and standards	2	3	18
Biodiversity data publishing: software (i.e. IPT , Tapirlink)	1	6	14
Biodiversity data publishing: persistent identifiers (i.e. GUIDs , LSIDs, DOIs)	1	7	13
Biodiversity data publishing: impact (citation, repatriation improvements, annotations)	2	9	9
Biodiversity data publishing: geospatial web services (i.e. OGC web services)	1	8	12
Biodiversity data indexing: software (GBIF registry and toolkits)	2	6	13
Biodiversity data retrieval: GBIF data portal and other similar resources	2	7	12
Biodiversity data retrieval: connecting GBIF data to other systems	2	7	12
Biodiversity data analysis and interpretation: gap analysis	3	6	12
Biodiversity data analysis and interpretation: ecological niche modelling	2	7	12
Biodiversity data use: science oriented	3	5	13
Biodiversity data use: policy and application oriented	4	6	11
Biodiversity data use: education oriented	3	7	11
Biodiversity Information Networks: the GBIF initiative	2	7	12
Biodiversity Information Networks: Node management	3	9	10
Biodiversity Information Networks: financial, legal and governance issues	5	8	9
Biodiversity Information Networks: social dynamics and barriers	5	8	7
Biodiversity Information Networks: how to develop effective training programs	4	8	9
Biodiversity Information Networks: communication, PR and outreach	6	6	9
Other: database management	2	6	14
Other: GIS software use	3	6	11
Sum	82	231	418

In term of the suitability for adaptation to electronic learning, there also diversity of opinions but there are some more clear trends.
Most of the topics related to biodiversity information networks are marked as less portable to electronic environments, together with biodiversity informatics in general and data mobilisation.
On the other side, the one marked as most suitable for eLearning are protocols and standards, followed by the use of data digitisation software and metadata management.

Analysis:
Topics closely related to software and protocols and standards are the one identified as more suitable for eLearning by respondents. On the other hand, those related to personal and social skills are found less suitable for electronic environments.

16.- Other comments

Question 17: Other comments on training programs and topics (open question)

The general comments by the respondents are listed here unmodified:

- These questions seem to cover most topics
- We have answered question 14 considering that the NODE is the national community of scientists, policy makers, conservationists, data providers, etc. involved with biodiversity information. Questions 14,15 16 have been difficult to answer because it was not clear to us what they are aiming at
- Try to limit the training program offered from the GBIF secretariat to cover topics that can be covered really very well! Try to stimulate and support a diverse training program approach at the Node level rather than to centralize all of the training efforts. Try to stimulate Nodes to assist each other with training on common interest topics.
- Many of the training topics we have suggested, we would be interested in delivering would be suitable to be incorporated into one session, rather than being composed of a number of training workshops. With regards to the e-Learning topics above, as a node we haven't gotten to the stage of applying ourselves to the e-Learning method. From the GBIF perspective this should also be made more clear what strategy or process is going to be followed with regards to e-learning, as each one of these topics is an entire discussion.
- The training topics and program are definitely needed and will be helpful to the nodes. As a node we would be interested in providing this services to other nodes, however we would need to be trained and also supported in the areas of personnel and bandwidth to deliver the services.
- They are really interesting
- Training about biodiversity databases targeted to young scientists is the MOST important priority for us (translated from French).