COCOS

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Co-creation Using Open Source Methods and Tools

LEARNING GUIDE for EDUCATORS

CoCOS Learning Guide for Educators, May 2020
Sofia | Ghent | Velenje| Madrid |Burgh-Haamstede

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I. Learning guide - purpose and expectations

Learning Guide

This Learning Guide (LG) is created by the partners in the CoCOS project, with more information available at http://cocos.education, to share experience and findings with colleagues and education professionals who wish to be acquainted with, or explore, the co-creation method and the available technological solutions with focus on open-source.

When we were designing the structure of the document, we worked with the intent to maximise the ease of use and the practical application of the LG. This is the reason why we opted for structured tables and infographics style presentation, wherever possible.

A more focused and elaborate document is also available from the project, namely the Conceptual Framework for Co-Creation.

Co-creation in Focus

Co-creation in the context of education, and particularly higher and adult education, is an exciting topic which is seeing its core principles and practices under extensive development and under professional scrutiny and research by educators and scholars. Arising initially from the world of business, coc-creation was quickly recognised as a massive driving force of creative expression and value creation.

We discuss the premises of co-creation and the challenges in using the method in education throughout the CoCOS project. It is only appropriate now to direct interested readers to the CoCOS Conceptual Framework document (available at http://cocos.education) for more elaborate coverage of this topic. In the Learning Guide (LG), however, we need a quick and clear working definition to which we may revert and consult while digesting the content of the LG itself. This will provide a focus point of reference which will act as a reminder of the context and purpose of this document. Yet when we say “quick and clear”, we are very much aware of the fluidity of available definitions, which is determined by the very wide field of application and the ongoing research focusing on separate idiosyncrasies. Hence we will put on display a “collection” of definitions which, it is our hope, can provide the understanding of the level of complexity of the concept, processes and interactions related to co-creation.

Sanders and Simons (2009) define co-creation as:

> a (…) “very broad term with a broad range of applications. We define co-creation as any act of collective creativity that is experienced jointly by two or more people. How is co-creation different from collaboration? It is a special case of collaboration where the intent is to create something that is not known in advance. The concept of co-design is directly related to co-creation. By co-design we refer to collective creativity as it is applied across the whole span of a design process. By these definitions, co-design is a specific instance of co-creation.”

Zwass (2010) brings up a concise and focused working definition:

> "Co‑creation is here defined broadly as the creation of value by consumers."

A view on the co-creation process is summed up by Lorenzo, Oblinger and Dziuban (2006):

> "Relationships exist online, facilitated by the exchange of profiles, text messages, photos, music, and the like. Constantly connected to information and each other, students don't just consume information. They create—and re-create—it. With a do-it-yourself, open source approach to material, students often take existing material, add their own touches, and republish it. Bypassing traditional authority channels, self-publishing—in print, image, video, or audio—is common. Access and exchange of information is nearly instantaneous."

And finally, **the Artevelde University of Applied Sciences, the lead partner in CoCOS, with their take on co-creation**, as materialised in their public statement of educational concept (section on learning environment):

> A learning environment that aims at co-creation invites students to lifelong and meaningful learning. Co-creation occurs when different parties (students, lecturers, staff members, the business world and society) jointly look for solutions for complex problems. This has a positive influence on the motivation of all parties involved as they can contribute in their own way and with their own talents and specialisation to achieve a mutual valued outcome and really make a difference. Co-creation stimulates the creativity and the initiative of these parties as they are challenged to spot opportunities, to approach problems from a different angle and to come up with innovative alternatives.
>
> The 'learning by developing'-concept contains a method to achieve co-creation. New skills and knowledge are developed in authentical research and development projects that aim at innovation and problem solving. The interdisciplinary cooperation between all parties involved is a crucial factor in this process.

II. Qualitative review of the pilot courses: Educators' survey results

Within the framework of the project, the partners designed and tested pilot courses in their respective countries. Then a survey-based evaluation of these pilot courses provided the project with valuable insights. We believe that sharing a summary of our findings could be of interest to other explorers of the co-creation method and to education professionals.

Identified strengths and expert analytical comment:

- Among the most frequently shared opinions is the satisfaction with the open and relaxed atmosphere, established during the process of co-creation. Educators vastly observed that learners did not experience any serious difficulties with using the digital tools through which co-creation was implemented. However, some educators did report this as a weakness (see section below). It seems natural that the learners have different levels of competence with regard to IT skills.
- Unanimously, the co-creation is evaluated by educators as having the potential to enhance creativity and teamwork abilities. Further on, co-creation successfully reveals hidden talents and skills of learners. **This is a key takeaway which should be stressed when presenting the method to new teachers.**
- The respondents are rather **eager to integrate co-creation in their teaching practices**. Although some of them have never been previously involved in co-creation, they still **enjoyed the results and placed high evaluation on them**. This is **a good source of motivation for teachers** who will yet be approaching the method as a novelty for them.
- Co-creation is suitable for **developing critical thinking skills as it focuses on the process of cooperation** as much as on the final product. **Fruitful cooperation builds a community of engaged stakeholders**. This **opens a lot of opportunities which teachers and their organisations must seek to exploit** - based on the specific contexts, this spirit of cooperation can be promoted and channeled for good cause.
- **Co-creation is about developing educator's professional skills and competences** and with each pilot to come it deploys new opportunities. **Working in a co-creation setting can therefore be promoted to new teachers as a professional development pathway.**
- Co-creation **allows for highly-profiled mentorship which is rewarding in terms of better and more successful learning experience**. This contributes to the function of the teacher as mentor and it may be wise to **institutionalise and integrate this into the formal teacher-learner communication** within each training organisation.

Identified weaknesses and expert analytical comment:

- The number of participants in the group for co-creation seems to be a significant factor - with distinct **preference and appreciation of smaller groups** by educators as they allow for better focusing on particular tasks and ensure more motivated

involvement on behalf of learners. **However, in mainstream education, group size is typically outside of the control of the teacher.**

- Educators have reported on **the amount of workload**. It seems to negatively affect the process of co-creation, unless it is carefully and adequately distributed among participants. Another possible drawback is the considerable weight of correcting the provided feedback as well as the search of sources. This means that, **at least until the method becomes an established practice, teachers need more time for a co-creative course.**
- **The desired level of digital skills and availability of technology/equipment is not there yet.** More efforts are needed to build on digital literacy skills as well as to provide more extended technical instructions and clarification in the course on using digital tools. For example, some of the suggested online tools were not that easy to use (e.g. Hypothesis).
- **A shared learning platform is something that educators wish for in the context of co-creation.** This could possibly reduce the amount of effort invested in preparing a course, which - in the absence of one shared platform - can sometimes outpace the effort invested in creation and cooperation itself.
- The need of additional supervision for some of the participants is one of the major drawbacks of co-creation as it makes it **more demanding both in terms of focused and sustained attention and time**.
- Sometimes co-creation **may need to be presented as a challenge in order to attract participants and engage them**. This would diminish in importance as the method gains traction and students become more familiar with it as a commonplace method.
- Deriving from the above weaknesses, a key factor which may have gone unreported or underreported remains the IT skills of the teachers. Without focused intervention, the co-creation activities will be limited at the top of the teacher's own competence level. This may lead to very different and significantly diverging learning experience when different courses (hence teachers) are being compared.

III. Qualitative review of the pilot courses: Learners' survey results

Identified strengths and expert analytical comment:

- It seems that the learners liked very much the possibility to be more independent during the process of co-creation. **This is something to be built up upon and used as a motivational vector.**
- Learners declare finding co-creation **a new and interesting way of learning**. They would very much appreciate it if it is **further integrated** in teaching methods.
- Co-creation is fun, which makes it appealing to young people and dedicated learners. One of the aspects most frequently quoted as attractive is **the opportunity to actively participate and be creative, while contributing to the quality of teamwork and final product**.
- Learners also enjoyed the responsibility of coordination, which **added extra value** to their contribution as well as **developed their teamwork and organisation skills**.

- **Learners feel they are sharing expertise with educators**, rather than being 'taught'. This is much appreciated and attributed to the specific features of co-creation. The individual attention that can be paid to participants in a small group for co-creation makes the method suitable for learners who need extra support.

Identified weaknesses and expert analytical comment:

- The work in bigger groups was somewhat disliked by the learners, as it was more tiresome and did not provide sufficient grounds for active participation and further motivation to reveal skills and knowledge. **The attention of the educator to the individual performance during co-creation is a factor of significant importance to the overall positive outcome.**
- Some learners found it difficult to review the contents and do fact-checking within the limited time available. **Timing seems a recurrent key factor in both learners' and educators' evaluations.**
- More technical support is desired on behalf of learners, **matching a similar weakness reported by educators in the previous section.**

IV. Review of experimental pilot courses

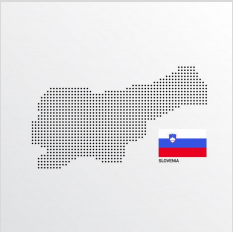
In CoCOS, we went through a rigorous process of learning about co-creation, experimenting with fellow educators, developing new courses. These pilot courses had diverse profiles, and this diversity was one of the reasons we insisted on experimenting in each participating country and allow initial variations in a number of factors (e.g. level of education, group size, subject) with the intent to experience and then be able to analyse how different approaches and methods can be applied within the larger co-creation framework.

This short summary section presents the typology of courses which we developed and tested. It gives an overview of the courses, their subject, the lead teacher, the institution hosting the course and the ICT tools used during the course. Note that at the time of writing this LG, some of the CoCOS partners are engaged in further pilot tests. We expect this drive to course creation and experimentation to continue well past the formal end of the CoCOS project.

In an activity prior to drafting of the Learning Guide we focused on collecting feedback from those who were involved in the courses - educators, peers or assistants, learners. A detailed analysis of these surveys is available in a separate document at http://cocos.education.

Table 1. The Geography of CoCOS courses

	Artevelde - Artevelde, BE (HE) **French D**, Scarlet Coopman Artevelde - Artevelde, BE (HE) **Audiovisual Media Technology**, Lennart Dubois
	Jaitek - Universidad Autónoma de Madrid, ES (HE) **Linguistic Development (kids 0-6)**, Gema de Pablo González & Mariano Sanz Prieto Jaitek - Universidad Autónoma de Madrid, ES (HE) **ICT in education and sports**, Mariano Sanz Prieto (two editions)

	AZ Ljudska univerza Velenje - AZ Ljudska univerza Velenje, SI (Adult education) **English Language (Level 2)**, Tina Ojsteršek AZ Ljudska univerza Velenje - AZ Ljudska univerza Velenje, SI (Adult education) **Italian Language**, Urška Petrič AZ Ljudska univerza Velenje - AZ Ljudska univerza Velenje, SI (VET) **Managing product groups**, Tatjana Klemenčič AZ Ljudska univerza Velenje - AZ Ljudska univerza Velenje, SI (AE) **Physics - module Astronomy**, Mateja Šeliga
	NTCenter - UNWE, BG (HE) **Economics of Labour**, Asst. Prof. Dr. Irina Danailova NTCenter - Balev Corporation, BG (AE - corporate training) **Presentation Skills**, Dr. Dessimira Velkova NTCenter - UNWE, BG (HE) **Unicorn Companies,** Assoc. Prof. Dr. Yovka Bankova NTCenter - Adam Smith College of Management, BG (Adult VET) **Economics: investment against citizenship**, Andrey Stoycheff, MBA
	Pro Work - Fontys (NL) (HE) **Design Thinking for Educators**, Annemarie van den Broek Pro Work - Fontys (NL) (HE) **Mindset**, Annemarie van den Broek Pro Work - Fontys (NL) (HE) **SAMR Model**, Annemarie van den Broek

Information matrix of pilot courses with experimentation details

Nine of the pilot courses were developed and delivered to an audience of university students (HE). Six were targeted at adult learning audences (AE), including two at adult vocational education and training level (Adult VET). This spread provides sufficient diversity and allows to discuss, in comparative terms, the different approaches and challenges.

Table 2. Matrix of pilot courses

Course title	Education level	Technology used (ICT tools)	# of learners in the course
French D	Higher Education	Canvas LMS	12
Audiovisual Media Technology	Higher Education	Canvas LMS Hypothesis Badgr Google Docs	179
Linguistic Development (kids 0-6)	Higher Education	Perusall Google Drive documents Moodle Google Sites	66
ICT in education and sports (two editions)	Higher Education	Perusall Google Sites Hypothesis	73 (aggregate for both editions)
English Language (Level 2)	Adult Education	Google Drive	12
Italian Language	Adult Education	Google Docs Kahoot! Mentimeter	5
Managing product group	Adult VET	Google Docs Google forms Moodle	7
Physics	Adult Education (low literacy adults, primary education level)	Google sites Hypothesis	7
Economics of Labour	Higher Education	Moodle Hypothesis	30
Presentation Skills	Adult Education (corporate training)	Moodle	6
Unicorn Companies	Higher Education	Moodle Hypothesis	28
Economics: investment against citizenship	Adult VET	Moodle Wiki activity (debate format)	14
Design Thinking for Educators	Higher Education	Xerte Hypothesis	25
Mindset	Higher Education	Xerte Hypothesis	25

SAMR Model	Higher Education	Xerte Hypothesis	25

Table 3. Summary of tools used in pilot courses

Learning platforms	**Bespoke annotation tools**
Moodle	Hypothesis
Canvas	Perusall
Xerte (as platform)	**Quizzes and instant feedback**
Google Drive/Google Docs (as platform)	Mentimeter
Google Classroom	Kahoot (as tool)
Kahoot (as platform)	**Adapted tools**
Authoring tools	Moodle Wiki activity (to create a debate environment)
Google Sites	**Other tools**
Google Docs (as tool)	Badgr
Xerte (as content creation tool)	

COCOS

COCOS bespoke co-creation tool *	In continuing development/testing https://www.arteveldehogeschool.be/cocos/editor/

* The COCOS own co-creation tools is now in operation and new course pilots are using it.

V. General and extended guidelines and recommendations

A. General guidelines in alignment with the conceptual framework

Co-creation is a process to be related with developing new skills of both educators and learners (for further reference see *Conceptual Framework CoCOS* at http://www.cocos.education). Co-creation allows for building personal attitude to the course content, immersing in the topic and deepening the knowledge. Co-creation turns knowledge into a genuine personal experience. It contributes to enriching and diversifying the course content as well as promotes critical thinking.

To reach these benefits at fullest, it is important to plan and deploy co-creation around the following conceptual milestones:

1. Motivate and actively involve various participants - students, professionals and other stakeholders. The involvement of direct creators as well as other stakeholders is key to providing the full spectrum of perspectives, which is of vital importance for co-creation. This is what sets it apart from other, more traditional forms of creating learning content, and also this is what could build a bridge between education and professional careers. The establishment of working and fruitful collaboration among various participants in co-creating could contribute to problem-solving and expanding the horizon of knowledge beyond textbooks and towards more practical dimensiones.
2. Establish multidisciplinary collaboration. This leading feature is not reserved to co-creation alone, however it has a significant role here. In the process of creating learning content from cross-subject perspectives, the learning objectives can be modified and applied in a more flexible manner to serve the needs of various target groups of education.
3. Building a trusting relationship among the co-creators is crucial, as it takes open-mindedness, courage and self-confidence to accept the various input of other co-creators.
4. Create ground for self-directed learning. Bearing on this, co-creation is gaining momentum as it will empower learners to be more independent and self-confident at any level of the learning process. This is to be of crucial importance in the coming era of distance learning, when the capability of self-directed learning may prove to be a success-winning personal skill.
5. Set quality criteria and rules to maintain them. At this step the role of educators as mentors and leading parties in the educational process is to be deployed at its fullest. We should never allow the quality standards for learning content to be dropped down. Their maintenance is to be achieved through a set of clear and understandable rules, instructions and criteria to be applied to the product of co-creation.

6. Make good use of digital technologies. The world of digital technologies is rapidly expanding, with new offers to make our life easier (or not?) popping up virtually every day. The smart use of technologies takes time and efforts for knowing and selecting the most appropriate tools. It takes time to build the skills and share them in the co-creating team, but it's well worthed.
7. Make room for different perspectives over the created content. This is somewhat ensured by the involvement of different stakeholders, nevertheless it is so essential so to be postulated separately.
8. Adopt a clear and fixed structure of the study materials for all the co-creators to follow. This is to be incorporated in the set of rules and instructions. Providing for way to obtain a usable end product, which brings together and merges different styles, approaches and makes best use of them, in an objective-oriented manner.
9. As an educator, be a role model and inspiration to learners. This has much to do with personal motivation which is fundamental to co-creation: the educator's role is to trigger and maintain the shared efforts on behalf of all co-authors and to keep their motivation alive.

B. Extended and specific guidelines and advice based on CoCOS pilots

During the experimentation phase there were important lessons learned. Many of them manifested in most experimentation settings (course, education level, country) and we believe they have, perhaps, transversal qualities. While further research may be needed to confirm this hypothesis, we are presenting down below our current understanding of these issues.

These lessons learned and advice are arranged in a table where each specific co-creation aspect is linked to a category label and short explanation is then provided alongside DOs and DON'Ts. Note that many aspects are part of more than one category. In Annexes to this Learning Guide we have provided further breakdowns which also include 5 key areas: EDUCATORS, LEARNERS, CONTENT, TECHNOLOGY, ORGANISATION.

On the following pages we lay out an empirically-driven table with categorisation which extends and complements the original 3-element T-pack model of the co-creation framework.

Aspect & Category Labels	Advice & Recommendations

ICT user proficiency of learners is key ICT competence Participation/engagement	It is key to the process to be aware of the level of ICT skills of learners to be addressed. This will allow for appropriate selection of learning tools to be embedded in the co-created content. **DO evaluation of the ICT proficiency levels first.** **DO make sure that your learners will be comfortable with using the tools you are planning for your course.**
Course delivery, learners' performance and course experience are directly relatable to the level of technical proficiency of participants (in any and all roles) ICT competence Adaptive content Participation/engagement Learning value	The co-created content may contain tasks of different levels of difficulty so as to meet different technical skill levels of learners. For example there might be a core of information, presented in an easily accessible format so that everybody could grasp the meaning of the learning content. Further on, a set of various tasks could address the different skill levels, for example demanding the application of specific software, etc. **DO think of tasks and activities corresponding to different skill levels of learners.** **DO consider the theory and practice of adaptive learning when planning a co-creation course.**
Time is of essence, technical issues and different ICT proficiency levels consume a lot of time, often leading to incomplete course activities and tasks ICT competence Adaptive content ICT support Time management Process management Participation/engagement Learning value	Preliminary assessment of ICT proficiency level would save a lot of time. It may be incorporated in the learning platform (self-evaluation questions, for example) and based on the results the learner may be directed to an easier or more difficult version of the learning content/activities or receive extra guidance. Continuous support (as opposed to one-time instructions) will also contribute to smooth running of the activities. Having a teaching assistant tasked specifically with providing ICT use support is one of the options. **DO offer quick and easy access to support and guidance.** **DO try and organise 'drills' so that you can time your course activities.** **DO NOT push your learners to sprint through content and activities - if it ever comes to this, then you should consider adjusting your course structure and activities instead.**
Multitude of available tools makes the course experience more diverse ICT tools Participation/engagement Learning value	This is relevant and applicable with users of higher ICT proficiency level. The more levels are possible to be addressed within the course, the better and more beneficial for various users, but it is important that this does not become a self-serving exercise - stay close to the learning objectives and your class' needs. **DO use multiple tools to diversify content and to address different skill levels of learners.** **DO think of your target groups' needs.**
Lack of single platform pairing	Many tools make the course more interesting to some

learning and co-creation is a problem ICT tools Organisational support	audienced, but many educators and learners struggle with the need to integrate two (or more) completely separate pieces of software and making them work in sync. The basic functionality of co-creation should become an integral part of the learning management systems and platforms. **DO insist that your organisation takes this into consideration when they choose their LMS solution or when they talk to their software developers who customise code for them.** **DO explore our CoCOS online course editor and evaluate its merits with regard to your specific training context and needs.**
Use of available tools for co-creation requires a steep learning curve, and sometimes there is not enough time to follow through ICT tools Time management Process management Participation/engagement	This may be addressed by setting step-by-step instructions and allowing for everyone to go at their own pace. With a clear distribution of tasks and quality supervision/management at different stages the steep learning curve should be easier to overcome. Guidance by more experienced peers is crucial, as well as positive teamwork environment, where one can share difficulties and receive immediate support. **DO create a clearly outlined collaboration space and make sure enough time is allocated.** **DO seek or offer timely guidance.** **DO NOT fall in complacency and misbelief that this process can sort itself.**
Active involvement of peer, co-trainer, ICT colleague, etc. needed Process management Participation/engagement Learning value	That is inevitable and actually fundamentally needed for the purposes of co-creation. It could be achieved through establishing co-working space, carefully thinking which colleagues to invite to work with, considering what competence or insight would they bring to the course, allowing for discussions, comments, demonstrations and even quick polls. **DO plan carefully your shared working space. See to availability of communication formats and options allowing for discussions and comments in real time.** **DO define, in dialogue or discussion, the role of each peer/collaborator in clear terms.** **DO NOT abuse the position of lead/authority, this may stifle creativity and engagement.**
General focus on co-creation: learners or peers? Process management Participation/engagement Learning value	Co-creation can, and indeed should, work both ways. Expanding the team on the teaching side does not mean that co-creation is over and done with. Learners are also part of the equation, and they should get their fair share of involvement. Benefits, like engagement level, are there to be picked up when participation of all stakeholders is encouraged. **DO try to include everyone.** **DO NOT opt to do what's convenient to you or the**

	bare minimum - aim for what's best for your course and learners, always.
Platforms and tools choices are almost entirely based on previous experience Participation/engagement ICT tools	This is an extremely large area of potential improvement of the co-creation practices. Most educators seem to prefer to stick with platforms and tools they are already familiar with. This precludes what could be a very productive and effective debate on the multitude of alternatives available and leads to missed opportunities. **DO make sure that new tools which you have not used before are on the table and receive proper consideration, try to learn and use some new tools with every course.** **DO NOT limit yourself to the tools you use traditionally and are comfortable for you.**
Planning is critical ICT tools ICT support Participation/engagement Process management TIme management Learning value	Planning process is critical for everything from timing, choice of platform and tools used, composition of team on the teaching side, designing the incentives for learners to participate. Though many educators are used to working alongside their gut instinct and are quick to adapt to changes, the teamplay requires somewhat different skills and approach. **DO set a clear planning process and development timeline, stick by the plan!** **DO NOT neglect planning and coordination.**
ICT support and guidance in class is important to make sure everyone has a possibility to participate ICT tools ICT support Participation/engagement Process management TIme management Learning value	Some students may feel left behind if they experience problems with the ICT tools used - which can be due to lack of clarity of presentation on the part of the teacher, or to insufficient ICT user skills and competence on the part of the learner. **DO encourage learners to work together, motivate high-achievers and engage them with assisting others.** **DO keep in mind that technology-related issues must be solved in a timely manner, else you risk your learners losing their motivation altogether, or significantly lagging behind.** **DO plan in advance for contingencies in case technology becomes a burden, always have a 'safe' plan B.**
The large amount of available tools makes it difficult for teachers to decide what to implement Process management ICT support ICT tools Learning value	It is important for teachers to plan and understand what would the exact function of implementing certain new tools, and how their use would improve the course and the learning process. Teachers should tap into the collective expertise in their training organisation when evaluating the expected benefits and risks related to any given tool. They need to see the bigger picture before deciding on using the tool. **DO seek - and take - ICT advice and consult colleagues with greater co-creation experience.**

Co-creation allows keeping course content fresh and up-to-date with relevant topics and examples. Adaptive content Participation/engagement Learning value	What is an interesting example for a teacher might not be interesting for a student. Co-creation allows learners to come up with content that is more relevant to their field of interest. This is a good example of how the method benefits teachers - by extending their own understanding of a topic, or by extending the field of application of the subject matter. Of course, this is not an automatic process and there will be learners' suggestions that are misplaced or bear little relevance to the subject in focus. **DO stay close to the needs of your learners and avoid getting into overly didactic spirit.** **DO recognise that co-creation is a collective effort and may sometimes depart from your 'ideal' expectations.**
Specific challenges vis-a-vis technical support when the teacher is a freelancer Organisational support Process management ICT support	External (freelance) teachers are not uncommon in many training organisations. This places an extra challenge with regard to organisational support, including technical support, peer collaboration and delivery. *As a freelance teacher…* **DO make and present a clear plan with the type and shape of support which you will need from the organisation.** **DO NOT assume that the organisation is familiar with the method or has the proper support infrastructure in place.** *As an organisation working with freelance teachers…* **DO inquire what specific course preparation, development and delivery support measures need to be in place.** **DO allocate a staff member with the responsibility to ensure proper coordination throughout the entire process.**
Level of interest is initially very high so careful implementation (dosage) is key. Too much at once leaves both teachers and students overwhelmed and confused. Time management Process management Adaptive content Participation/engagement Learning value	Due to the multitude of possibilities in approach and method stemming from co-creation, the focus often shifts from course content to technical part of the course. This takes time and may cause delays. **DO plan carefully and always keep in mind timing, workload and complexity of task.** **DO NOT forget that technology is there to assist and facilitate, not to become centerpiece.**
Technology use in class is also fun	Technology use in class is a key factor determining the overall learning experience. Depending on the particular context, technology has the potential for a

ICT tools Process management Learning value	‘wow’ effect. When introduced to organisations of predominantly traditional teaching profile and methods, it brings in a new motivational and learning vector. It is an overwhelmingly positive and emotional experience and it is easy to decide to push for more and more ‘fun’ tools. **DO NOT insist on introducing a particular technology or tool just because you think it will be ‘fun’ for your learners.** **DO balance between breaking traditional teaching models and sensible, target-oriented use of technology - such use must bring value to your course.**
Organisational and institutional support, balance and integration Organisational support Time management Process management	While an individual teacher considers co-creation in the context of their own course and subject, and organisational support is of key importance, it is also very important to keep a balance within the organisation. **DO make sure (as a teacher) that your organisation knows what you are doing and is actively supporting you.** **DO keep in mind that when other colleagues consider co-creation method for their classes with the same group, there must be a balancing and coordination effort making sure the aggregate workload is considered and managed.** **DO take steps to introduce and integrate the co-creation method, and to embed the resulting cooperation and collaboration practices in the organisational culture.**

“Do not move co-creation approach close to your practice - move your practice close to the co-creation model.”

VI. Concluding notes

This CoCOS Learning Guide (LG) for educators was conceived as a practical tool bringing up – for discussion and experimentation – important insights stemming from the well-established theoretical framework and from CoCOS own piloting.

Piloting of co-creation courses informed, through the mediation of surveys, direct observation and analysis, a series of recommendations.

Our CoCOS results are meaningful and valid for the sample of courses which we created and implemented in the course of this project. As such, we had a limited (to the scope of the partnership) exposure and use of ICT tools which reflected – and arguable pushed further ahead – the existing ICT competence of the educators involved in the co-creation. SImilarly, the contexts and subjects for which we developed and piloted co-creating courses were limited to the field and practice of the training institutions and the individual educators involved in the project. Though we were aiming at variety of educational levels (HE, Adult VET, Adult) and subjects, in group size, we recognise that other contexts may produce different results.

The recommendations we make are based on both the piloting and on the theoretical framework.

While we were designing and experimenting with the pilot courses, an IT team at Artevelde University of Applied Sciences (the Lead partner) was tasked with creating a digital tool that would, eventually, resolve some of the difficulties in the selection and use of technologies for co-creation. This came from an early recognition of the fact that use of many separate software units in any single course may, in some cases, lead to confusion among learners. This tool – CoCOS online course editor – is already operational at the time of writing of this LG and can be accessed through the CoCOS website (http://cocos.education) or via contact with any of the CoCOS partners.

If you are using this LG in a digital format, you may use this link for direct access to the CoCOS editor: https://www.arteveldehogeschool.be/cocos/editor/

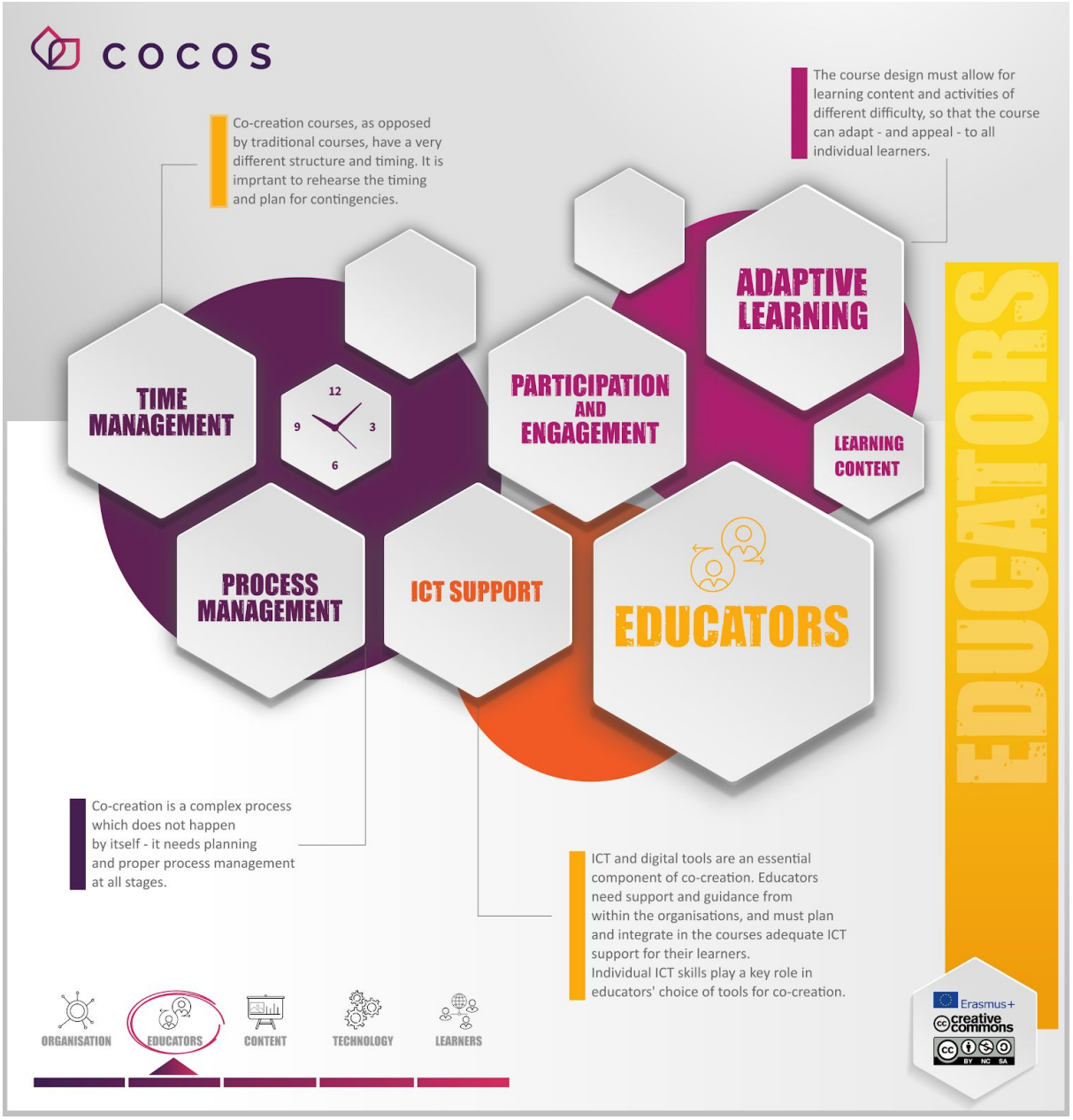
Annexes

The annexes of this Learning Guide contain **rearranged versions of the advice and recommendations** table published in the main text above (Extended and specific guidelines and advice based on CoCOS pilots). They are **filtered for each of the five key areas** so that the reader can quickly move to the area of interest and find relevant advice. Each annex features an infographic summarising the main issues within that particular areas. The tables contain more detailed explanation and advice.

An important feature of the infographics is that they remain 'open'. They do summarise and conceptualise the elements and aspects for each key area, but they recognise, as we do as education practitioners, researchers and analysts, the complexity of the educational process. Hence **we leave each graphic open to new elements and new interpretations** that different contexts of co-creation will inevitably trigger.

Follow the link to the key area of interest to you at the moment:

Annex A. Table breakdown by labels and key areas: EDUCATORS



Aspect & Category Labels	Advice & Recommendations
ICT user proficiency of learners is key ICT competence Participation & engagement LEARNERS EDUCATORS TECHNOLOGY	It is key to the process to be aware of the level of ICT skills of learners to be addressed. This will allow for appropriate selection of learning tools to be embedded in the co-created content. **DO evaluation of the ICT proficiency levels first.** **DO make sure that your learners will be comfortable with using the tools you are planning for your course.**

Course delivery, learners' performance and course experience are directly relatable to the level of technical proficiency of participants (in any and all roles) ICT competence Adaptive content Participation & engagement Learning value CONTENT EDUCATORS PROCESS	The co-created content may contain tasks of different levels of difficulty so as to meet different technical skill levels of learners. For example there might be a core of information, presented in an easily accessible format so that everybody could grasp the meaning of the learning content. Further on, a set of various tasks could address the different skill levels, for example demanding the application of specific software, etc. **DO think of tasks and activities corresponding to different skill levels of learners.** **DO consider the theory and practice of adaptive learning when planning a co-creation course.**
Time is of essence, technical issues and different ICT proficiency levels consume a lot of time, often leading to incomplete course activities and tasks ICT competence Adaptive content ICT support Time management Process management Participation & engagement Learning value TECHNOLOGY CONTENT EDUCATORS LEARNERS	Preliminary assessment of ICT proficiency level would save a lot of time. It may be incorporated in the learning platform (self-evaluation questions, for example) and based on the results the learner may be directed to an easier or more difficult version of the learning content/activities or receive extra guidance. Continuous support (as opposed to one-time instructions) will also contribute to smooth running of the activities. Having a teaching assistant tasked specifically with providing ICT use support is one of the options. **DO offer quick and easy access to support and guidance.** **DO try and organise 'drills' so that you can time your course activities.** **DO NOT push your learners to sprint through content and activities - if it ever comes to this, then you should consider adjusting your course structure and activities instead.**
Multitude of available tools makes the course experience more diverse ICT tools Participation & engagement Learning value TECHNOLOGY EDUCATORS	This is relevant and applicable with users of higher ICT proficiency level. The more levels are possible to be addressed within the course, the better and more beneficial for various users, but it is important that this does not become a self-serving exercise - stay close to the learning objectives and your class' needs. **DO use multiple tools to diversify content and to address different skill levels of learners.** **DO think of your target groups' needs.**
Lack of single platform pairing	Many tools make the course more interesting to some

learning and co-creation is a problem ICT tools Organisational support TECHNOLOGY EDUCATORS ORGANISATION	audienced, but many educators and learners struggle with the need to integrate two (or more) completely separate pieces of software and making them work in sync. The basic functionality of co-creation should become an integral part of the learning management systems and platforms. **DO insist that your organisation takes this into consideration when they choose their LMS solution or when they talk to their software developers who customise code for them.** **DO explore our CoCOS online course editor and evaluate its merits with regard to your specific training context and needs.**
Use of available tools for co-creation requires a steep learning curve, and sometimes there is not enough time to follow through ICT tools Time management Process management Participation/engagement EDUCATORS LEARNERS CONTENT	This may be addressed by setting step-by-step instructions and allowing for everyone to go at their own pace. With a clear distribution of tasks and quality supervision/management at different stages the steep learning curve should be easier to overcome. Guidance by more experienced peers is crucial, as well as positive teamwork environment, where one can share difficulties and receive immediate support. **DO create a clearly outlined collaboration space and make sure enough time is allocated.** **DO seek or offer timely guidance.** **DO NOT fall in complacency and misbelief that this process can sort itself.**
Active involvement of peer, co-trainer, ICT colleague, etc. needed Process management Participation/engagement Learning value EDUCATORS CONTENT	That is inevitable and actually fundamentally needed for the purposes of co-creation. It could be achieved through establishing co-working space, carefully thinking which colleagues to invite to work with, considering what competence or insight would they bring to the course, allowing for discussions, comments, demonstrations and even quick polls. **DO plan carefully your shared working space. See to availability of communication formats and options allowing for discussions and comments in real time.** **DO define, in dialogue or discussion, the role of each peer/collaborator in clear terms.** **DO NOT abuse the position of lead/authority, this may stifle creativity and engagement.**
General focus on co-creation: learners or peers? Process management Participation/engagement Learning value EDUCATORS	Co-creation can, and indeed should, work both ways. Expanding the team on the teaching side does not mean that co-creation is over and done with. Learners are also part of the equation, and they should get their fair share of involvement. Benefits, like engagement level, are there to be picked up when participation of all stakeholders is encouraged. **DO try to include everyone.**

LEARNERS CONTENT	**DO NOT opt to do what's convenient to you or the bare minimum - aim for what's best for your course and learners, always.**
Platforms and tools choices are almost entirely based on previous experience Participation/engagement ICT tools Organisational support EDUCATORS ORGANISATION CONTENT	This is an extremely large area of potential improvement of the co-creation practices. Most educators seem to prefer to stick with platforms and tools they are already familiar with. This precludes what could be a very productive and effective debate on the multitude of alternatives available and leads to missed opportunities. Organisational support and involvement, or the lack thereof, can make a meaningful contribution to this aspect. **DO make sure that new tools which you have not used before are on the table and receive proper consideration, try to learn and use some new tools with every course.** **DO NOT limit yourself to the tools you use traditionally and are comfortable for you.**
Planning is critical ICT tools ICT support Participation/engagement Process management TIme management Learning value EDUCATORS CONTENT TECHNOLOGY ORGANISATION	Planning process is critical for everything from timing, choice of platform and tools used, composition of team on the teaching side, designing the incentives for learners to participate. Though many educators are used to working alongside their gut instinct and are quick to adapt to changes, the teamplay requires somewhat different skills and approach. **DO set a clear planning process and development timeline, stick by the plan!** **DO NOT neglect planning and coordination.**
ICT support and guidance in class is important to make sure everyone has a possibility to participate ICT tools ICT support Participation/engagement Process management TIme management Learning value EDUCATORS LEARNERS TECHNOLOGY ORGANISATION	Some students may feel left behind if they experience problems with the ICT tools used - which can be due to lack of clarity of presentation on the part of the teacher, or to insufficient ICT user skills and competence on the part of the learner. Availability of technology and related support within the organisation are an important impact vector for the course. **DO encourage learners to work together, motivate high-achievers and engage them with assisting others.** **DO keep in mind that technology-related issues must be solved in a timely manner, else you risk your learners losing their motivation altogether, or significantly lagging behind.** **DO plan in advance for contingencies in case technology becomes a burden, always have a 'safe' plan B.**
The large amount of available	It is important for teachers to plan and understand

tools makes it difficult for teachers to decide what to implement Process management ICT support ICT tools Learning value TECHNOLOGY EDUCATORS ORGANISATION CONTENT	what would be the exact function of implementing certain new tools, and how their use would improve the course and the learning process. Teachers should tap into the collective expertise in their training organisation when evaluating the expected benefits and risks related to any given tool. They need to see the bigger picture before deciding on using the tool. **DO seek - and take - ICT advice and consult colleagues with greater co-creation experience.**
Co-creation allows keeping course content fresh and up-to-date with relevant topics and examples. Adaptive content Participation/engagement Learning value CONTENT EDUCATORS LEARNERS	What is an interesting example for a teacher might not be interesting for a student. Co-creation allows learners to come up with content that is more relevant to their field of interest. This is a good example of how the method benefits teachers - by extending their own understanding of a topic, or by extending the field of application of the subject matter. Of course, this is not an automatic process and there will be learners' suggestions that are misplaced or bear little relevance to the subject in focus. **DO stay close to the needs of your learners and avoid getting into overly didactic spirit.** **DO recognise that co-creation is a collective effort and may sometimes depart from your 'ideal' expectations.**
Specific challenges vis-a-vis technical support when the teacher is a freelancer Organisational support Process management ICT support EDUCATORS ORGANISATION TECHNOLOGY	External (freelance) teachers are not uncommon in many training organisations. This places an extra challenge with regard to organisational support, including technical support, peer collaboration and delivery. *As a freelance teacher…* **DO make and present a clear plan with the type and shape of support which you will need from the organisation.** **DO NOT assume that the organisation is familiar with the method or has the proper support infrastructure in place.** *As an organisation working with freelance teachers…* **DO inquire what specific course preparation, development and delivery support measures need to be in place.** **DO allocate a staff member with the responsibility to ensure proper coordination throughout the entire process.**
Technology use in class is also fun	Technology use in class is a key factor determining the overall learning experience. Depending on the

ICT tools Process management Learning value CONTENT TECHNOLOGY EDUCATORS	particular context, technology has the potential for a 'wow' effect. When introduced to organisations of predominantly traditional teaching profile and methods, it brings in a new learning motivation vector. It is an overwhelmingly positive and emotional experience and it is easy to decide to push for more and more 'fun' tools. **DO NOT insist on introducing a particular technology or tool just because you think it will be 'fun' for your learners.** **DO balance between breaking traditional teaching models and sensible, target-oriented use of technology - such use must bring value to your course.**
Organisational and institutional support, balance and integration Organisational support Time management Process management ORGANISATION EDUCATORS	While an individual teacher considers co-creation in the context of their own course and subject, and organisational support is of key importance, it is also very important to keep a balance within the organisation. **DO make sure (as a teacher) that your organisation knows what you are doing and is actively supporting you.** **DO keep in mind that when other colleagues consider co-creation method for their classes with the same group, there must be a balancing and coordination effort making sure the aggregate workload is considered and managed.** **DO take steps to introduce and integrate the co-creation method, and to embed the resulting cooperation and collaboration practices in the organisational culture.**

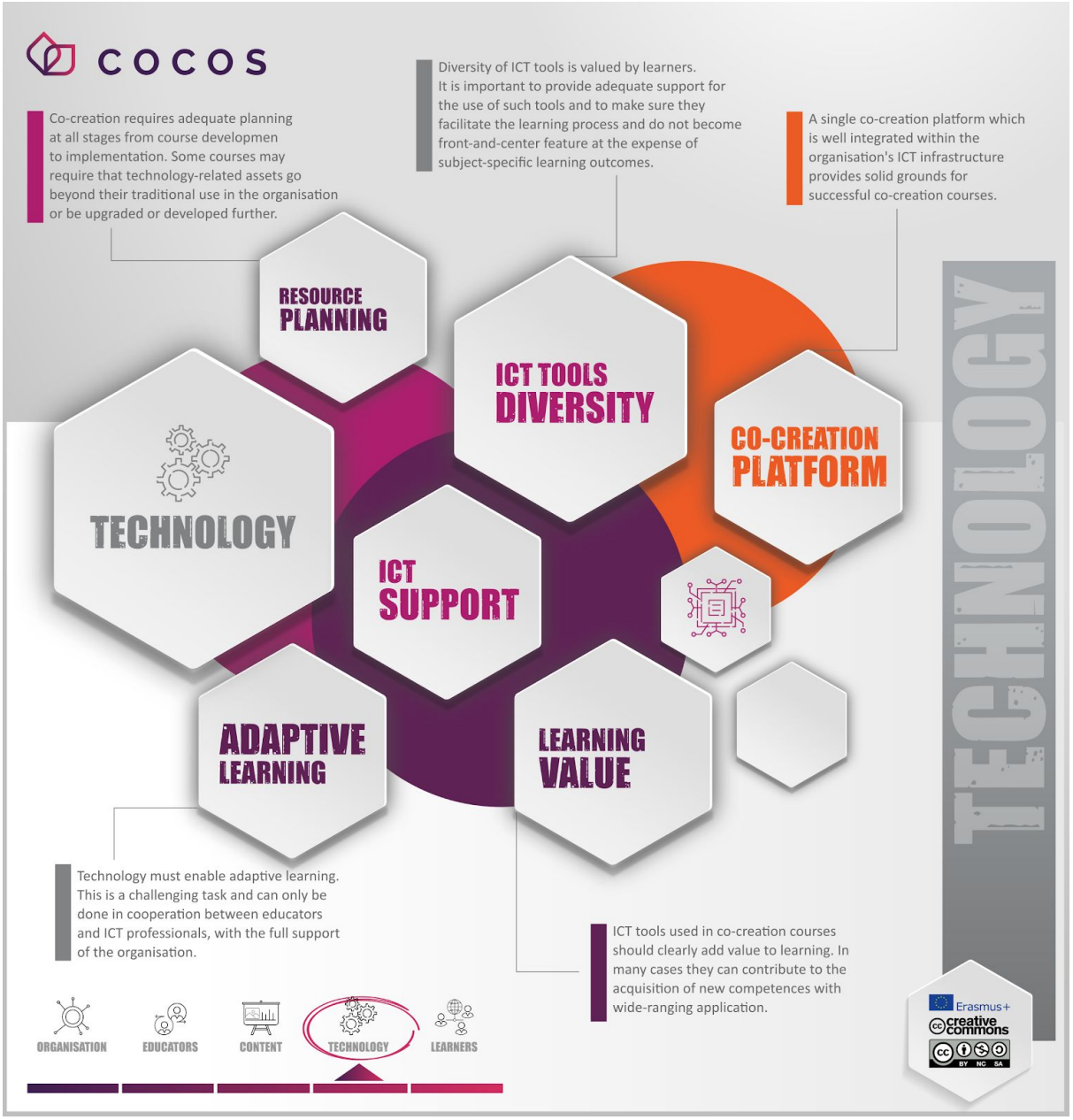
Annex B. Table breakdown by labels and key areas: LEARNERS

Aspect & Category Labels	Advice & Recommendations
ICT user proficiency of learners is key ICT competence Participation & engagement LEARNERS EDUCATORS TECHNOLOGY	It is key to the process to be aware of the level of ICT skills of learners to be addressed. This will allow for appropriate selection of learning tools to be embedded in the co-created content. **DO evaluation of the ICT proficiency levels first.** **DO make sure that your learners will be comfortable with using the tools you are planning for your course.**

Time is of essence, technical issues and different ICT proficiency levels consume a lot of time, often leading to incomplete course activities and tasks ICT competence Adaptive content ICT support Time management Process management Participation & engagement Learning value TECHNOLOGY CONTENT EDUCATORS LEARNERS	Preliminary assessment of ICT proficiency level would save a lot of time. It may be incorporated in the learning platform (self-evaluation questions, for example) and based on the results the learner may be directed to an easier or more difficult version of the learning content/activities or receive extra guidance. Continuous support (as opposed to one-time instructions) will also contribute to smooth running of the activities. Having a teaching assistant tasked specifically with providing ICT use support is one of the options. **DO offer quick and easy access to support and guidance.** **DO try and organise 'drills' so that you can time your course activities.** **DO NOT push your learners to sprint through content and activities - if it ever comes to this, then you should consider adjusting your course structure and activities instead.**
Multitude of available tools makes the course experience more diverse ICT tools Participation & engagement Learning value TECHNOLOGY EDUCATORS LEARNERS	This is relevant and applicable with users of higher ICT proficiency level. The more levels are possible to be addressed within the course, the better and more beneficial for various users, but it is important that this does not become a self-serving exercise - stay close to the learning objectives and your class' needs. **DO use multiple tools to diversify content and to address different skill levels of learners.** **DO think of your target groups' needs.**
Use of available tools for co-creation requires a steep learning curve, and sometimes there is not enough time to follow through ICT tools Time management Process management Participation/engagement EDUCATORS LEARNERS CONTENT	This may be addressed by setting step-by-step instructions and allowing for everyone to go at their own pace. With a clear distribution of tasks and quality supervision/management at different stages the steep learning curve should be easier to overcome. Guidance by more experienced peers is crucial, as well as positive teamwork environment, where one can share difficulties and receive immediate support. **DO create a clearly outlined collaboration space and make sure enough time is allocated.** **DO seek or offer timely guidance.** **DO NOT fall in complacency and misbelief that this process can sort itself.**
General focus on co-creation:	Co-creation can, and indeed should, work both ways.

learners or peers? Process management Participation/engagement Learning value EDUCATORS LEARNERS CONTENT	Expanding the team on the teaching side does not mean that co-creation is over and done with. Learners are also part of the equation, and they should get their fair share of involvement. Benefits, like engagement level, are there to be picked up when participation of all stakeholders is encouraged. **DO try to include everyone.** **DO NOT opt to do what's convenient to you or the bare minimum - aim for what's best for your course and learners, always.**
ICT support and guidance in class is important to make sure everyone has a possibility to participate ICT tools ICT support Participation/engagement Process management TIme management Learning value EDUCATORS LEARNERS TECHNOLOGY ORGANISATION	Some students may feel left behind if they experience problems with the ICT tools used - which can be due to lack of clarity of presentation on the part of the teacher, or to insufficient ICT user skills and competence on the part of the learner. Availability of technology and related support within the organisation are an important impact vector for the course. **DO encourage learners to work together, motivate high-achievers and engage them with assisting others.** **DO keep in mind that technology-related issues must be solved in a timely manner, else you risk your learners losing their motivation altogether, or significantly lagging behind.** **DO plan in advance for contingencies in case technology becomes a burden, always have a 'safe' plan B.**
Co-creation allows keeping course content fresh and up-to-date with relevant topics and examples. Adaptive content Participation/engagement Learning value CONTENT EDUCATORS LEARNERS	What is an interesting example for a teacher might not be interesting for a student. Co-creation allows learners to come up with content that is more relevant to their field of interest. This is a good example of how the method benefits teachers - by extending their own understanding of a topic, or by extending the field of application of the subject matter. Of course, this is not an automatic process and there will be learners' suggestions that are misplaced or bear little relevance to the subject in focus. **DO stay close to the needs of your learners and avoid getting into overly didactic spirit.** **DO recognise that co-creation is a collective effort and may sometimes depart from your 'ideal' expectations.**

Annex C. Table breakdown by labels and key areas: TECHNOLOGY



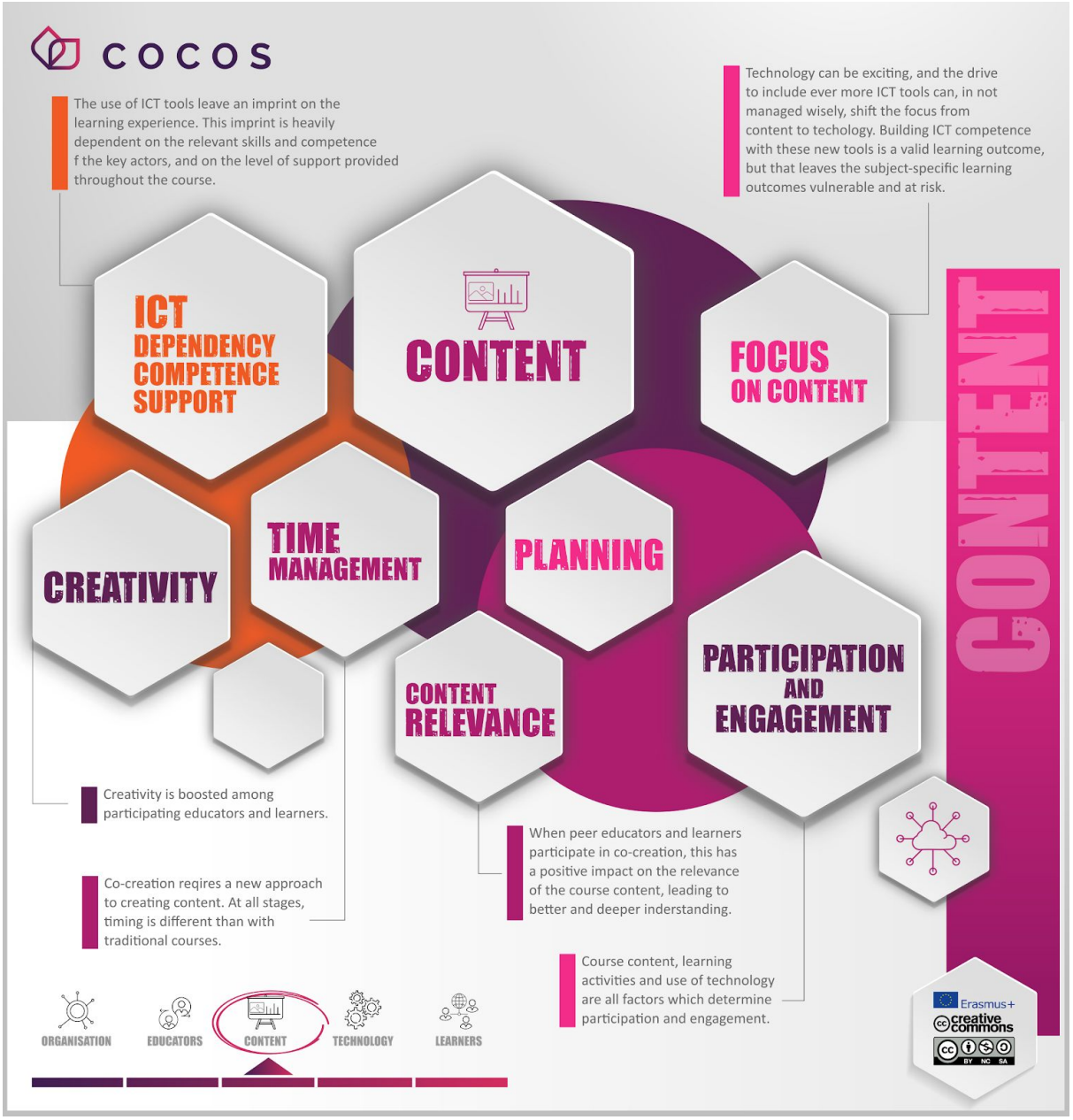
Aspect & Category Labels	Advice & Recommendations
ICT user proficiency of learners is key ICT competence Participation & engagement LEARNERS EDUCATORS TECHNOLOGY	It is key to the process to be aware of the level of ICT skills of learners to be addressed. This will allow for appropriate selection of learning tools to be embedded in the co-created content. **DO evaluation of the ICT proficiency levels first.** **DO make sure that your learners will be comfortable with using the tools you are planning for your course.**

Time is of essence, technical issues and different ICT proficiency levels consume a lot of time, often leading to incomplete course activities and tasks ICT competence Adaptive content ICT support Time management Process management Participation & engagement Learning value TECHNOLOGY CONTENT EDUCATORS LEARNERS	Preliminary assessment of ICT proficiency level would save a lot of time. It may be incorporated in the learning platform (self-evaluation questions, for example) and based on the results the learner may be directed to an easier or more difficult version of the learning content/activities or receive extra guidance. Continuous support (as opposed to one-time instructions) will also contribute to smooth running of the activities. Having a teaching assistant tasked specifically with providing ICT use support is one of the options. **DO offer quick and easy access to support and guidance.** **DO try and organise 'drills' so that you can time your course activities.** **DO NOT push your learners to sprint through content and activities - if it ever comes to this, then you should consider adjusting your course structure and activities instead.**
Multitude of available tools makes the course experience more diverse ICT tools Participation & engagement Learning value TECHNOLOGY EDUCATORS	This is relevant and applicable with users of higher ICT proficiency level. The more levels are possible to be addressed within the course, the better and more beneficial for various users, but it is important that this does not become a self-serving exercise - stay close to the learning objectives and your class' needs. **DO use multiple tools to diversify content and to address different skill levels of learners.** **DO think of your target groups' needs.**
Lack of single platform pairing learning and co-creation is a problem ICT tools Organisational support TECHNOLOGY EDUCATORS ORGANISATION	Many tools make the course more interesting to some audienced, but many educators and learners struggle with the need to integrate two (or more) completely separate pieces of software and making them work in sync. The basic functionality of co-creation should become an integral part of the learning management systems and platforms. **DO insist that your organisation takes this into consideration when they choose their LMS solution or when they talk to their software developers who customise code for them.** **DO explore our CoCOS online course editor and evaluate its merits with regard to your specific training context and needs.**
Planning is critical ICT tools ICT support	Planning process is critical for everything from timing, choice of platform and tools used, composition of team on the teaching side, designing the incentives for learners to participate. Though many educators are

Participation/engagement Process management TIme management Learning value EDUCATORS CONTENT TECHNOLOGY ORGANISATION	used to working alongside their gut instinct and are quick to adapt to changes, the teamplay requires somewhat different skills and approach. **DO set a clear planning process and development timeline, stick by the plan!** **DO NOT neglect planning and coordination.**
ICT support and guidance in class is important to make sure everyone has a possibility to participate ICT tools ICT support Participation/engagement Process management TIme management Learning value EDUCATORS LEARNERS TECHNOLOGY ORGANISATION	Some students may feel left behind if they experience problems with the ICT tools used - which can be due to lack of clarity of presentation on the part of the teacher, or to insufficient ICT user skills and competence on the part of the learner. Availability of technology and related support within the organisation are an important impact vector for the course. **DO encourage learners to work together, motivate high-achievers and engage them with assisting others.** **DO keep in mind that technology-related issues must be solved in a timely manner, else you risk your learners losing their motivation altogether, or significantly lagging behind.** **DO plan in advance for contingencies in case technology becomes a burden, always have a 'safe' plan B.**
The large amount of available tools makes it difficult for teachers to decide what to implement Process management ICT support ICT tools Learning value TECHNOLOGY EDUCATORS ORGANISATION CONTENT	It is important for teachers to plan and understand what would be the exact function of implementing certain new tools, and how their use would improve the course and the learning process. Teachers should tap into the collective expertise in their training organisation when evaluating the expected benefits and risks related to any given tool. They need to see the bigger picture before deciding on using the tool. **DO seek - and take - ICT advice and consult colleagues with greater co-creation experience.**
Specific challenges vis-a-vis technical support when the teacher is a freelancer Organisational support Process management ICT support	External (freelance) teachers are not uncommon in many training organisations. This places an extra challenge with regard to organisational support, including technical support, peer collaboration and delivery. *As a freelance teacher…* **DO make and present a clear plan with the type and shape of support which you will need from the**

EDUCATORS ORGANISATION TECHNOLOGY	**organisation.** **DO NOT assume that the organisation is familiar with the method or has the proper support infrastructure in place.** *As an organisation working with freelance teachers…* **DO inquire what specific course preparation, development and delivery support measures need to be in place.** **DO allocate a staff member with the responsibility to ensure proper coordination throughout the entire process.**
Level of interest is initially very high so careful implementation (dosage) is key. Too much at once leaves both teachers and students overwhelmed and confused. Time management Process management Adaptive content Participation/engagement Learning value CONTENT TECHNOLOGY	Due to the multitude of possibilities in approach and method stemming from co-creation, the focus often shifts from course content to technical part of the course. This takes time and may cause delays. **DO plan carefully and always keep in mind timing, workload and complexity of task.** **DO NOT forget that technology is there to assist and facilitate, not to become centerpiece.**
Technology use in class is also fun ICT tools Process management Learning value CONTENT TECHNOLOGY EDUCATORS	Technology use in class is a key factor determining the overall learning experience. Depending on the particular context, technology has the potential for a 'wow' effect. When introduced to organisations of predominantly traditional teaching profile and methods, it brings in a new learning motivation vector. It is an overwhelmingly positive and emotional experience and it is easy to decide to push for more and more 'fun' tools. **DO NOT insist on introducing a particular technology or tool just because you think it will be 'fun' for your learners.** **DO balance between breaking traditional teaching models and sensible, target-oriented use of technology - such use must bring value to your course.**

Annex D. Table breakdown by labels and key areas: CONTENT



Aspect & Category Labels	Advice & Recommendations
Course delivery, learners' performance and course experience are directly relatable to the level of technical proficiency of participants (in any and all roles) ICT competence Adaptive content Participation & engagement Learning value	The co-created content may contain tasks of different levels of difficulty so as to meet different technical skill levels of learners. For example there might be a core of information, presented in an easily accessible format so that everybody could grasp the meaning of the learning content. Further on, a set of various tasks could address the different skill levels, for example demanding the application of specific software, etc. **DO think of tasks and activities corresponding to different skill levels of learners.** **DO consider the theory and practice of adaptive learning when planning a co-creation course.**

CONTENT EDUCATORS PROCESS	
Time is of essence, technical issues and different ICT proficiency levels consume a lot of time, often leading to incomplete course activities and tasks ICT competence Adaptive content ICT support Time management Process management Participation & engagement Learning value TECHNOLOGY CONTENT EDUCATORS LEARNERS	Preliminary assessment of ICT proficiency level would save a lot of time. It may be incorporated in the learning platform (self-evaluation questions, for example) and based on the results the learner may be directed to an easier or more difficult version of the learning content/activities or receive extra guidance. Continuous support (as opposed to one-time instructions) will also contribute to smooth running of the activities. Having a teaching assistant tasked specifically with providing ICT use support is one of the options. **DO offer quick and easy access to support and guidance.** **DO try and organise 'drills' so that you can time your course activities.** **DO NOT push your learners to sprint through content and activities - if it ever comes to this, then you should consider adjusting your course structure and activities instead.**
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	DO define, in dialogue or discussion, the role of each peer/collaborator in clear terms. **DO NOT abuse the position of lead/authority, this may stifle creativity and engagement.**
General focus on co-creation: learners or peers? Process management Participation/engagement Learning value EDUCATORS LEARNERS CONTENT	Co-creation can, and indeed should, work both ways. Expanding the team on the teaching side does not mean that co-creation is over and done with. Learners are also part of the equation, and they should get their fair share of involvement. Benefits, like engagement level, are there to be picked up when participation of all stakeholders is encouraged. **DO try to include everyone.** **DO NOT opt to do what's convenient to you or the bare minimum - aim for what's best for your course and learners, always.**
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Planning is critical ICT tools ICT support Participation/engagement Process management TIme management Learning value EDUCATORS CONTENT TECHNOLOGY ORGANISATION	Planning process is critical for everything from timing, choice of platform and tools used, composition of team on the teaching side, designing the incentives for learners to participate. Though many educators are used to working alongside their gut instinct and are quick to adapt to changes, the teamplay requires somewhat different skills and approach. **DO set a clear planning process and development timeline, stick by the plan!** **DO NOT neglect planning and coordination.**
The large amount of available tools makes it difficult for teachers to decide what to implement	It is important for teachers to plan and understand what would be the exact function of implementing certain new tools, and how their use would improve the course and the learning process. Teachers should tap into the collective expertise in their training

Process management ICT support ICT tools Learning value TECHNOLOGY EDUCATORS ORGANISATION CONTENT	organisation when evaluating the expected benefits and risks related to any given tool. They need to see the bigger picture before deciding on using the tool. **DO seek - and take - ICT advice and consult colleagues with greater co-creation experience.**
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Level of interest is initially very high so careful implementation (dosage) is key. Too much at once leaves both teachers and students overwhelmed and confused. Time management Process management Adaptive content Participation/engagement Learning value CONTENT TECHNOLOGY	Due to the multitude of possibilities in approach and method stemming from co-creation, the focus often shifts from course content to technical part of the course. This takes time and may cause delays. **DO plan carefully and always keep in mind timing, workload and complexity of task.** **DO NOT forget that technology is there to assist and facilitate, not to become centerpiece.**
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EDUCATORS	**DO NOT insist on introducing a particular technology or tool just because you think it will be 'fun' for your learners.** **DO balance between breaking traditional teaching models and sensible, target-oriented use of technology - such use must bring value to your course.**

Annex E. Table breakdown by labels and key areas: ORGANISATION

Aspect & Category Labels	Advice & Recommendations
Lack of single platform pairing learning and co-creation is a problem ICT tools Organisational support TECHNOLOGY EDUCATORS ORGANISATION	Many tools make the course more interesting to some audienced, but many educators and learners struggle with the need to integrate two (or more) completely separate pieces of software and making them work in sync. The basic functionality of co-creation should become an integral part of the learning management systems and platforms. **DO insist that your organisation takes this into consideration when they choose their LMS solution or when they talk to their software developers who customise code for them.** **DO explore our CoCOS online course editor and**

	evaluate its merits with regard to your specific training context and needs.
Platforms and tools choices are almost entirely based on previous experience Participation/engagement ICT tools Organisational support EDUCATORS ORGANISATION CONTENT	This is an extremely large area of potential improvement of the co-creation practices. Most educators seem to prefer to stick with platforms and tools they are already familiar with. This precludes what could be a very productive and effective debate on the multitude of alternatives available and leads to missed opportunities. Organisational support and involvement, or the lack thereof, can make a meaningful contribution to this aspect. **DO make sure that new tools which you have not used before are on the table and receive proper consideration, try to learn and use some new tools with every course.** **DO NOT limit yourself to the tools you use traditionally and are comfortable for you.**
Planning is critical ICT tools ICT support Participation/engagement Process management TIme management Learning value EDUCATORS CONTENT TECHNOLOGY ORGANISATION	Planning process is critical for everything from timing, choice of platform and tools used, composition of team on the teaching side, designing the incentives for learners to participate. Though many educators are used to working alongside their gut instinct and are quick to adapt to changes, the teamplay requires somewhat different skills and approach. **DO set a clear planning process and development timeline, stick by the plan!** **DO NOT neglect planning and coordination.**
ICT support and guidance in class is important to make sure everyone has a possibility to participate ICT tools ICT support Participation/engagement Process management TIme management Learning value EDUCATORS LEARNERS TECHNOLOGY ORGANISATION	Some students may feel left behind if they experience problems with the ICT tools used - which can be due to lack of clarity of presentation on the part of the teacher, or to insufficient ICT user skills and competence on the part of the learner. Availability of technology and related support within the organisation are an important impact vector for the course. **DO encourage learners to work together, motivate high-achievers and engage them with assisting others.** **DO keep in mind that technology-related issues must be solved in a timely manner, else you risk your learners losing their motivation altogether, or significantly lagging behind.** **DO plan in advance for contingencies in case technology becomes a burden, always have a 'safe' plan B.**
The large amount of available	It is important for teachers to plan and understand

tools makes it difficult for teachers to decide what to implement Process management ICT support ICT tools Learning value TECHNOLOGY EDUCATORS ORGANISATION CONTENT	what would be the exact function of implementing certain new tools, and how their use would improve the course and the learning process. Teachers should tap into the collective expertise in their training organisation when evaluating the expected benefits and risks related to any given tool. They need to see the bigger picture before deciding on using the tool. **DO seek - and take - ICT advice and consult colleagues with greater co-creation experience.**
Specific challenges vis-a-vis technical support when the teacher is a freelancer Organisational support Process management ICT support EDUCATORS ORGANISATION TECHNOLOGY	External (freelance) teachers are not uncommon in many training organisations. This places an extra challenge with regard to organisational support, including technical support, peer collaboration and delivery. *As a freelance teacher…* **DO make and present a clear plan with the type and shape of support which you will need from the organisation.** **DO NOT assume that the organisation is familiar with the method or has the proper support infrastructure in place.** *As an organisation working with freelance teachers…* **DO inquire what specific course preparation, development and delivery support measures need to be in place.** **DO allocate a staff member with the responsibility to ensure proper coordination throughout the entire process.**
Organisational and institutional support, balance and integration Organisational support Time management Process management ORGANISATION EDUCATORS	While an individual teacher considers co-creation in the context of their own course and subject, and organisational support is of key importance, it is also very important to keep a balance within the organisation. **DO make sure (as a teacher) that your organisation knows what you are doing and is actively supporting you.** **DO keep in mind that when other colleagues consider co-creation method for their classes with the same group, there must be a balancing and coordination effort making sure the aggregate workload is considered and managed.** **DO take steps to introduce and integrate the co-creation method, and to embed the resulting cooperation and collaboration practices in the organisational culture.**