Language Learning Online in the age of Mobility (LLOM)

Report IO1 – Qualitative study

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1 Introduction

1.1 Definition of research goals

To promote multilingualism within the EU and facilitate language learning in the age of mobility, the LLOM project will develop a mobile assisted language learning app (open resource) that meets the requirements of accessibility to high quality language learning as well as of flexibility and convenience to mobile language learners. The main target groups of this study and, at the same time, the future users of the free mobile language learning app are (exchange) students motivated to learn another language as well as current and future language teachers interested in diversifying their teaching methods by including mobile assisted language learning into their course design.

The data collected in this study is based on semi-structured interviews with (international) students, (current and future) language teachers, as well as experts in the field. Results should deliver a structured approach to mobile assisted language learning, a report on best practices in the field and a collection of quality requirements of the future app.

1.2 Methodology

In order to develop the conceptual framework for the app, to know the language needs of the future end users, and to gain insights into experiences with already existing mobile learning apps, a qualitative approach was chosen. The empirical study was carried out in three different European countries – Austria, France and Poland – at three universities with good access to language learners and language teachers. That is to say that data collection took place at three partner universities in the project (Université Paris 1 Panthéon-Sorbonne, University of Lodz and University of Vienna). Altogether, we planned 18 to 24 semi-structured, preferably face-to-face interviews with both language learners (around 9 interviews) and language teachers (around 9 interviews) to include both perspectives. In addition, we planned 2 to 6 expert interviews. We define experts in this context as persons who are working as teachers or researchers in the field of mobile assisted language learning.

At the University of Vienna, the interview guideline with open questions was elaborated and afterwards shared with the project partners. After this feedback process, the guideline was adapted and finally used by the three above-mentioned partner organisations to perform the interviews. There are two similar versions of the guideline, one for language learners, one for language teachers. The third guideline for experts was mainly based on a guideline stemming from our partner organisation in Portugal, the Universidade de Aveiro, and then slightly adapted by the Viennese team. All of the interviews were audio and/or video-recorded and transcribed in each country.

We asked questions concerning the following topics (guideline for language learners):

- Knowledge on existing mobile learning apps
- Mobile language learning habits (situations, preferences)
- Motivation for mobile language learning
- Blended language learning
- Needed mobile language leaning apps' features
- Individual language learning needs and attitudes
- Ideas on a crowd-sourced approach to language learning

In the interviews with language teachers we added two more topics:

- Experiences as a (mobile) language teacher
- Useful mobile language learning apps' features for own course design

From January to the end of March 2019, we already had conducted 6 interviews in Austria, 6 in Poland and 2 in France. Up to now, interviews in Vienna had a length between 31 and 46 minutes, in Lodz between 11 and 36, and in Paris between 15 to 26 minutes.

Transcripts from Paris and Lodz were handed over to the Viennese team, which is performing the analysis and interpretation of data. The six interviews from Poland were sent to Vienna on the 27th of March 2019, the first interview from Paris was sent on the 15th of March, and the second on the 19th of March 2019.

To analyse the transcripts we conducted a qualitative content analysis. Categories were built deductively prior to analysing the data and they are based on the main topics from the interview guideline. Categories were applied on the transcripts with the help of the computer-based programme Maxqda.

2 Literature review

2.1 Approaches to mobile assisted language learning

Usually based on the special characteristics of MALL, current literature mentions various possible approaches to it, among them situated language learning, authentic language learning, contextualised language learning and task-based language learning (Cheon et al. 2012; Kukulska-Hulme 2009). All four of them are described shortly in the chapters below.

2.1.1 Situated language learning

Situated learning is the first approach to mobile assisted language learning to be discussed in this paper. The use of mobile devices supports the students' learning processes, as they are able to realise learning within a real context (Cheon et al. 2012; Pfeiffer et al. 2009). Following the theory of situated cognition, learning runs more smoothly in empowering contexts, i.e. in a situated activity which enables participation and interactivity with the community. Learning contexts in this understanding are the driving force for learning. They allow students to "work collaboratively on the activities of the community, and [to] develop professional knowledge and unique identities in the community" (Huang et al 2011, p. 1201). In addition, situated learning contexts offer the opportunity for students to work on authentic activities and learn to transfer their acquired knowledge to real world situations (Ünal & Inan 2010). Learning, therefore, is perceived as a social activity that stresses the social construction of knowledge and the social interaction in the learning environment. Some studies show that students, e.g. pre-service teachers, also find web-based activities as situated learning activities quite helpful to develop new skills, especially in order to understand how to integrate technology in their future work (Huang et al. 2011; Ünal & Inan 2010). Situated learning is also frequently taken as an underlying concept when analysing communities of practice, where learning usually is linked to participation, engagement and (re)negotiation of meaning (Orsmond & Merry 2017).

Researchers on MALL transferred the approach of situated learning to the context of learning second and/or foreign languages (Kukulska-Hulme 2009) and emphasised the learner-centred aspects: language learners' experiences, learner-generated content and language learners' active roles in constructing knowledge are focused (Abdallah et al. 2015). In this social constructionist view, collaborative learning in a contextualised virtual reality takes place and allows language learners "to engage in personal, meaningful learning through collaboration and interaction" and "to use language appropriately in different socio-cultural contexts" (Shih & Yang 2008, p. 59).

Within the European Lifelong Learning Programme's SIMOLA (Situated Mobile Language Learning) project, the use of the mobile language app LingoBee was investigated from different angles. LingoBee is a free crowd-sourced mobile app (open source) which facilitates and intensifies collaboration among language learners and teachers. Its approach to language learning is learner-centred and collaborative supported by mobile technology. The creation of content is situated in socio-cultural

contexts in so far as users can upload their preferred content at any given time or place, usually when the environment offers some interesting impulse. The situated context enables users to be spontaneous and creative (see also 2.1.3 and 2.4 below).

Other studies on online/mobile situated language learning are stressing, for instance, speech recognition and the possibilities for situated spoken language learning by using 3D learning environments and the ability to integrate different audio elements (in avatar interactions), video clips, graphics etc. (Jones, Squires & Hicks 2008), or they scrutinise the impact of situated language learning on students' engagement and learning progress (Yang 2011; Orsmond & Merry 2017).

2.1.2 Authentic language learning

Authenticity (of materials/texts, tasks etc.) is central when it comes to language learning (Mishan 2003). It is usually discussed in connection with enhanced learner autonomy: "In the language learning context, autonomy and authenticity are essentially symbiotic. The 'ideal', effective autonomous learner will utilise a wide variety of authentic sources in his/her learning and it is in an autonomous learning environment that such texts can best be explored" (Mishan 2003, p. 9). It can be assumed that authentic language learning takes place when language learners perceive materials and tasks as useful with regard to their language learning needs and when the learning content refers to real-life contexts and therefore allows language learners a purposeful and meaningful construction of knowledge (Roach et al. 2018; Wong et al. 2010; Brown et al. 1989; Perry 2004).

Below we refer to the set of criteria of authenticity elaborated by Mishan (2003, p. 18) which can be easily transferred to our context of mobile language learning (in a crowd-sourced approach):

"Authenticity is the factor of the:

1. *Provenance and authorship* of the text.
2. *Original communicative and socio-cultural purpose* of the text.
3. *Original context (e.g. its source, socio-cultural context)* of the text.
4. *Learning activity* engendered by the text.
5. *Learners' perceptions of and attitudes to*, the text and *the activity* pertaining to it."

Linking the discussion of authenticity to MALL, it is worth mentioning that it seems highly relevant for successful mobile language learning (apps) to respect and integrate this criterion: "Authentic communicative situations are critical to successful language learning" (Shih & Yang 2008, 66). Tasks and content of mobile language learning (apps) are expected to be authentic. Several studies evoke the necessarily authentic character of language learning content supported by mobile technology (Wong et al. 2010; Jones, Squires & Hicks 2008; Demouy & Kukulska-Hulme 2010). In addition, authentic learning is closely linked to situated and contextualised

learning, which can be derived from the criteria above as well as from research on situated and contextualised (language) learning (e.g. Jones, Squires & Hicks 2008).

In their study on “Design principles for authentic learning of English as a foreign language”, Ozverir et al. (2016) developed 11 design principles:

1. Authentic activities have real-world relevance
2. Authentic activities are complex and ill-defined
3. Authentic activities provide the opportunity for students to examine the task from different perspectives, using a variety of resources
4. Authentic activities provide the opportunity to collaborate
5. Authentic activities provide the opportunity to reflect
6. Authentic activities lead beyond domain- and skill-specific outcomes
7. Authentic activities are seamlessly integrated with assessment
8. Authentic activities yield polished products valuable in their own right rather than as preparation for something else
9. Authentic activities allow competing solutions and diversity of outcome
10. Authentic activities are conducive to both learning and communicating
11. Authentic activities provide motivational factors

2.1.3 Contextualised language learning

This approach to language learning refers to the contextualised nature of communication and it is highly intertwined with the notion of authentic and situated language learning (Wong et al. 2016). Moments and occasions to learn are situated in context. “[O]pportunities to learn a new word or an expression that is stimulated by something around a language learner, perhaps during a walk in the city […]. These language learning moments often provide answers to questions or problems that have not been defined” (Petersen, Procter-Legg & Cacchione 2013, p. 35). Users learn accordingly to respond creatively to new or existing situations.

In that sense, Wong et al. (2016, p. 402) stress the notion of *seamless learning* referring e.g. to contextualised vocabulary learning. The latter refers to the smooth transition and switching of individual learning processes from one context or setting to another. They highlight the great importance of contextualised learning strategies over decontextualized learning strategies which are still often found in formal educational settings.

More specifically focusing on MALL, Ezra & Cohen (2018, p. 159) identify and investigate in their study on contextualised MALL three parameters for evaluating it:

1. Device mobility
2. Real world context
3. Real life context

The distinction between real world context and real life context appears useful when it comes to activities and task development. Thus, real world context relates to places where learning takes place. The diversity of communicative situations is here central

for language learning purposes (developing *linguistic competence)*, partly because of different language learning styles and preferences (see section 2.3 below). In contrast, real life context pertains to every-day language use, where language learners have to *perform linguistically* in concrete social activities, like e.g. buying a bus ticket or food (instead of only learning the vocabulary in order to know how to buy a ticket).

Many studies have proven that contextualised second or foreign language learning should be preferred over decontextualized strategies and that mobile devices and their assets may easily offer authentic learning context and "real world situations as learning contexts for a target language" (Lan et al. 2018, p. 86).

2.1.4 Task-based language teaching and learning

Similarly to the three approaches to language learning mentioned up until now, task-based language teaching and learning is linked to the other three approaches and equally recommended for learning settings that are lacking authenticity, significance, that are socially and culturally diverse or that somehow show educational problems for alternative reasons (Tai 2012; Shehadeh 2012; Thomas & Reinders 2015; Lai & Lin 2015).

Task-based language learning (TBL) integrates situated, authentic and contextualised language learning and, in addition, it promotes language learning via the accomplishment of different meaningful tasks that must be performed or problems that must be solved and that involve real communication. It is a learner-centred approach underlining motivational and practical (language use) aspects of language learning (Richards & Rodgers 2014, p. 174; Verikaitė 2008; Lätsch 2017, p.54). The key principles of TBL can be described as follows:

"[...] learning is fostered through performing a series of activities as steps towards successful task realization. The focus is on language use for authentic, real-world needs. TBL relies heavily on learners' knowledge of the world, on learners' using skills of deduction and independent language analysis to exploit the situation fully. Motivation for communication becomes the primary driving force. The emphasis is on communicative fluency rather than the accuracy. The target language is used in a naturally occurring context. The materials are selected and adopted from authentic sources" (Verikaitė 2008, p. 71).

Transferred to MALL, Ducate & Lomicka (2013, p. 449), more specifically, enumerated four distinct features of tasks which should be respected in the mobile learning context in order to foster learning success and motivation (based on Hoven & Palalas 2011):

1. The content of tasks should be relevant to different language learning types/styles.
2. Task design should encourage active engagement and search for apt linguistic material.

3. The tasks should require active interaction with another learner or instructor or give instructions that guide the users towards task completion.
4. The tasks should promote mediation and interaction and provide relationships "by means of interactions with other learners or with resources obtained through mobile devices. Thus, learners learn to process meaning through a fluid system of mediated verbal and nonverbal relationships that are contingent on affordances in their context and environment. These relationships may be mediated by other learners, more sophisticated users of the language, signs and nuances in the context, technology-based resources, and the technological tools themselves" (Ducate & Lomicka 2013, p. 449-450).

In the needs analysis they conducted on second language learners and language teachers and their inclination towards MALL, Park & Slater (2014) elaborated a typology of tasks for MALL:

Language skill	Task types	Target tasks
Reading	Locating information from English online sources	Define words using an online dictionary Read online course materials for specific information Search for specific content in an online newspaper Search for specific content in a website Search for specific content online Find a content source to use in writing assignment
Listening/ speaking	Using the telephone for voice calls	Call friends Call classmates and relay content from class Call for reservation (e.g., hospital, restaurant) Make an appointment Call faculty to ask for information Order from a restaurant Summarize your thoughts orally for later transcribing Record your voice to compare pronunciation
	Using a dictation/video app	Create a video-recording of a short presentation
Listening	Gathering information from English online sources	Listen to a lecture and text key info to classmate Listen to the news and call classmate to talk Listen to podcasts and text to/call classmate Watch YouTube and text key info to classmate Fill in graphics to take notes
	Taking notes from an online source	Take notes without graphic assistance
Writing	Sending e-mails	Write formal e-mail (to faculty, etc.) Write informal e-mail (to friends, etc.) Chat (via SMS) with classmates about the course Use online sources to outline a paper Use app functions for remembering and note-taking Take a picture and send it with an e-mail
	Posting written contents online	Post on social networking sites Submit assignments on the course website Reply to classmates' comments on the course website

Figure 1: Typology of potential task types and target tasks (Source: Park & Slater 2014, p. 111)

Although the focus in the study by Park and Slater (2014) is not necessarily language learning via mobile apps, the tasks cited above may also give some guidance for task development in a language learning app.

2.2 Language needs analysis

Research on language needs is appropriate and popular in the context of MALL, as the study of Park & Slater (2014) presented above clearly shows. In foreign language education, language needs are often defined as a gap between the language learner's current proficiency in a foreign language and what should be reached in terms of linguistic competences and/or performances as a future goal that language learners strive for (Brindley 1989, p. 65; Huhta 2010, p. 33). Traditional definitions of language needs tend to focus on the individual learner: In developing new curricula or new course materials for language learning purposes, usually only the students' perspective (seen as a relatively homogeneous group of language learners) and the language teachers' perspective is taken into account (Lavric, Lesk & Stegu 2017). Often missing from such reflections are possible further expectations of, or demands from, other stakeholders in the process of language learning, as well as the differentiation of different categories of possible language learners and their individual needs (Huhta et al. 2013, p. 11).

In the context of mobile assisted language learning, it seems to be more reasonable to split the group of language learners. We should rather take into account not only the opinions and reflections of a general group of students and teachers, but also the perspective of 'domain experts' (Long 2005, p. 27). Domain experts on MALL are, for instance, end users of language learning apps, experts in the field of MALL, like teacher trainers, supervisors and researchers in MALL, as well as teachers already applying blended learning features (combining mobile language learning with traditional forms of in-class teaching) in their language courses. They have first-hand knowledge of and experience on the different language needs met by existing language learning apps they use, they have expert knowledge on the challenges and advantages of MALL and, depending on their level of self-reflection, they know best about their own preferred approach to language learning and teaching as well as on their language learning styles, strategies and habits.

Researchers in language needs analysis propose different labels to categorize language needs. Vandermeeren (2005) and Brindley (1989) mention "subjective and objective" needs. Brindley (1989: 65) suggests that "to be more confident when dealing with visitors from abroad" is an example of a subjective need, as distinguished from the objective need "to be able to show visitors around" (cf. also Huhta et al. 2013: 12). Hutchinson and Waters (1987) differentiate between "target needs" and "learning needs". According to them, the former are the skills to be achieved, while the latter comprise the steps necessary to acquire those skills. Berwick (1989) distinguishes between "felt needs" and "perceived needs", as learners are often aware of only some of their learning requirements (or have false

expectations in general), and depend on teachers or language planners to provide a more realistic assessment.

In the context of this study, the distinction between which kind of individual language needs can be met by developing and using mobile language learning apps and which cannot, provides a useful guideline to choose content, tasks and features in the future app to be developed.

2.3 Language styles and strategies

In order to explain different attitudes towards or preferences over mobile language learning tasks or even whole language learning apps, we can observe that studies and surveys on MALL often refer to individual language styles and learning strategies. Results show that it appears necessary to, firstly, identify language learner target groups and, secondly, choose the target group(s) aimed at before developing a language learning app or any other language learning material (Verikaitė 2008; Stockwell & Hubbard 2013; Wong et al. 2010; Abdallah & Mansour 2015):

“Appropriately selected tasks and methods can generate students' motivation. The appeal of methods is extended if methods are selected according to students' learning styles. *Learning style* refers to any individual's preferred ways of learning. It depends on the student's personality, including psychological or cognitive character, sociocultural background and educational experience. According to learning styles, all learners can be divided into visual, auditory, and kinaesthetic learners.” (Verikaitė 2008, p. 68)

In this quotation the sensory preferences were addressed. Oxford (2003) brings up major learning style dimensions relevant to second or foreign language learning. It is important to note that learning styles operate on a continuum and that generally language learners are not purely distinct in either category:

1. Sensory preferences
2. Personality types
    a. Extraverted vs. introverted
    b. Intuitive-random vs. sensing-sequential
    c. Thinking vs. feeling
    d. Closure-oriented/judging vs. open/perceiving
3. Desired degree of generality
    a. Global/holistic vs. analytic
4. Biological differences
    a. Biorhythms
    b. Sustenance
    c. Location

Learning strategies (e.g. Lee 2010; Schmid 1996) are directly linked to learning styles. They “are specific behaviors or thought processes that students use to enhance their own L2 learning” (Oxford 2003”, p. 8). Furthermore, learning strategies

are consciously applied and intended to reach learning objectives more easily and faster. Oxford (1990, p. 313) distinguishes six main categories of L2 learning strategies (three direct and three indirect strategies):

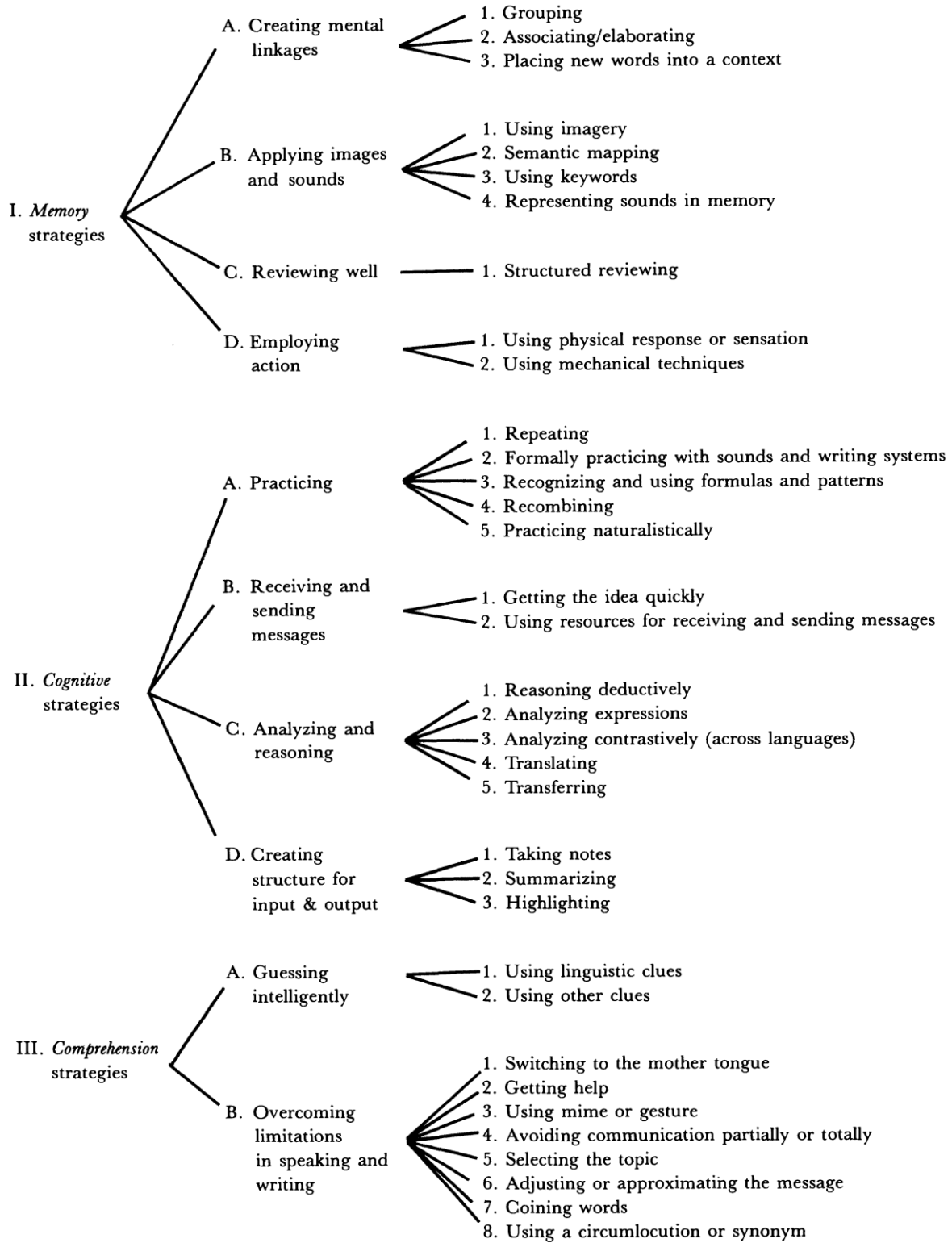


Figure 2: Oxford's strategy classification system (direct strategies) (Source: Oxford 1990, p. 313)

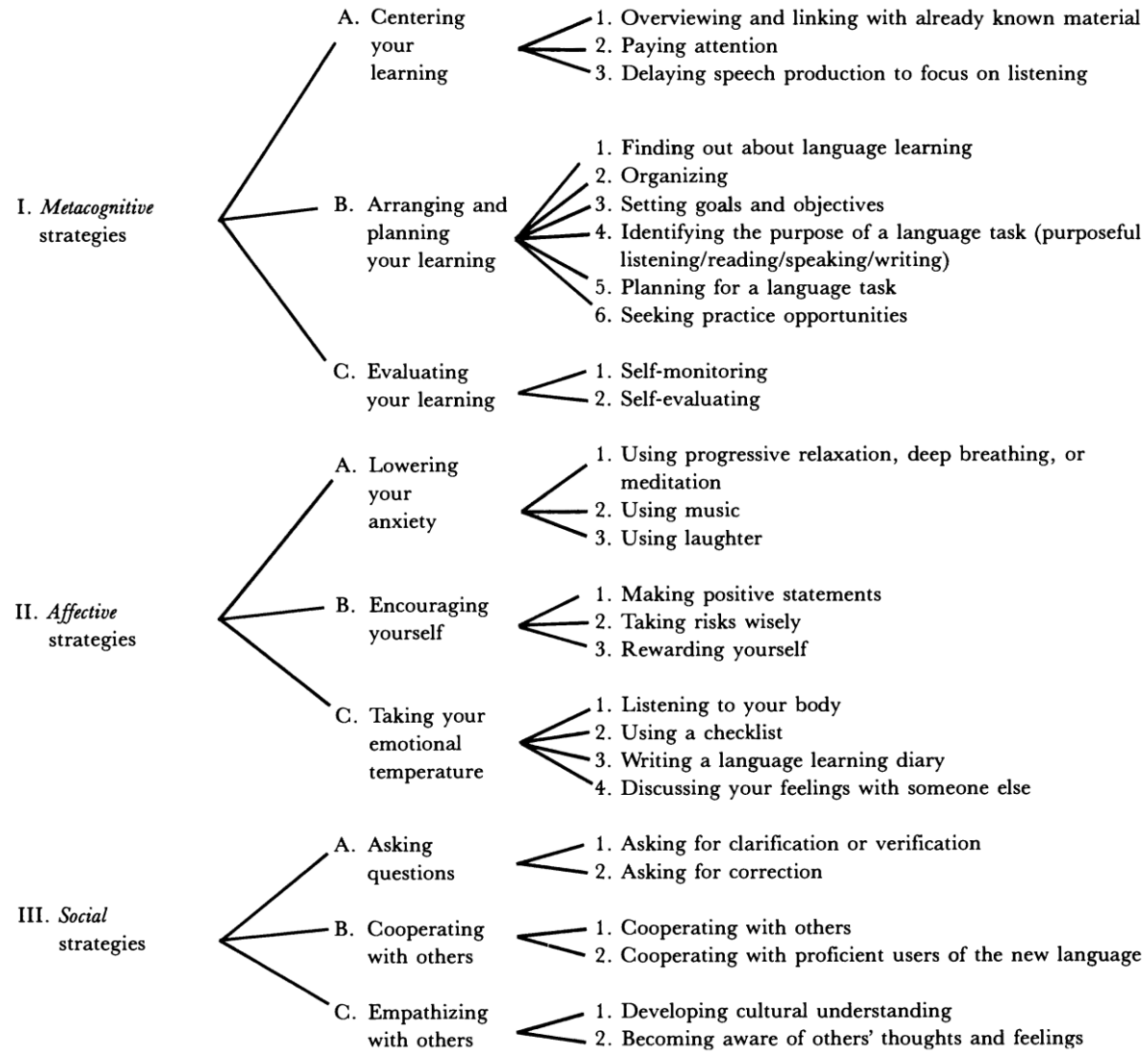


Figure 3: Oxford's strategy classification system (indirect strategies) (Source: Oxford 1990, p. 313)

For the underlying research project, a special focus on the indirect language learning strategies seems to be fruitful. Language learning in a crowd-sourced approach relying on collaboration, motivation and feedback should not ignore the importance of social, affective and meta-cognitive learning strategies, as mentioned in Figure 3.

2.4 Crowd-sourced approach to language learning

In this section, we will refer to previous studies on content generation in a crowd-sourced approach, in general, as well as on studies focusing, more specifically, on mobile language learning in a crowd-sourced approach. Among other reasons, (language) teachers, adopting a learner-centred approach, are using mobile technologies nowadays in order to develop learners' skills and competences in the realm of being able to co-create or produce new knowledge (Kukulska-Hulme 2010; Kuo et al. 2008). Current research on crowd-sourcing deals, for instance, with quality issues of content entries inherently linked to the nature of data collection in a crowd-

sourced approach (Negri et al. 2011; Nowshin et al. 2018), with structuring and organising collaborative multilingual educational content by fostering the power of the crowd for translation purposes (Tarasowa et al. 2014), or with digital pedagogy and the need for learning-rich environments in superdiverse contexts (Prieto 2016).

As mentioned previously (see chapter 2.1.1 and 2.1.3), the SIMOLA project (Adlard, Ottway & Procter-Legg 2012), in which the use of the mobile language learning app LingoBee was explored, combined ideas of crowd-sourcing and social networking: “[W]e will explore the ideas of mobility and creativity in language learning through the use of LingoBee, a mobile app for situated language learning. LingoBee is designed to support collaborative language learning, using ideas from crowdsourcing and social networks. LingoBee users create language learning content that is stored not only on their personal device, but is shared with other users via the cloud-based repository” (Petersen, Procter-Legg & Cacchione 2013, p. 35).

In the paper by Petersen, Procter-Legg & Cacchione (2013) the main interest is on studying creativity in mobile language learning. However, they identified and described several examples of creative content creation by language learners. The mobile app LingoBee supports the following user activities. It allows users

- to add entries (words or phrases) into the LingoBee repository,
- to add new descriptions to existing entries (i.e. possibility of multiple descriptions),
- to upload multimedia elements (e.g. photos, audios, web links) to an entry,
- to individualise their profiles to enhance collaboration and networking,
- and to give feedback through peer rating and flagging entries.

In their article, Petersen, Procter-Legg & Cacchione (2013) grouped their given examples of creative content creation into three categories:

1. Creativity enhanced by the situated context or the spontaneity of the moment (presented as the so-called “LingoBee moments”);
2. Creativity informed and promoted by the possibility to use multimediality and collaboration;
3. Creativity induced by authentic and everyday use of language (e.g. conversations with native speakers).

In another SIMOLA project paper (Petersen, Procter-Legg & Cacchione 2014), the impact of support and guidance by language teachers on learner engagement and on the use of the mobile app LingoBee itself was investigated. Findings show that enhanced teacher involvement results in a higher level of participation by the learners (e.g. a higher number of new entries). Typical activities or examples of support to intensify language learning experiences of students mentioned in this study are activities like a scavenger hunt, show and tell activities and a walking tour of the city using LingoBee or establishing a Facebook support group, as well as using online dictionaries or Wikipedia as a means to assist their language learning activities. In

the framework of the ongoing LLOM project, these findings appear quite interesting, as LLOM also favours a teacher-led context when developing its language learning app.

User created content for language learners requires a system's architecture and the generation of personas informing user scenarios. In their paper on mobile informal language learning, Pemberton et al. (2009) present a scenario based design shown in Figure 4 and Table 1:

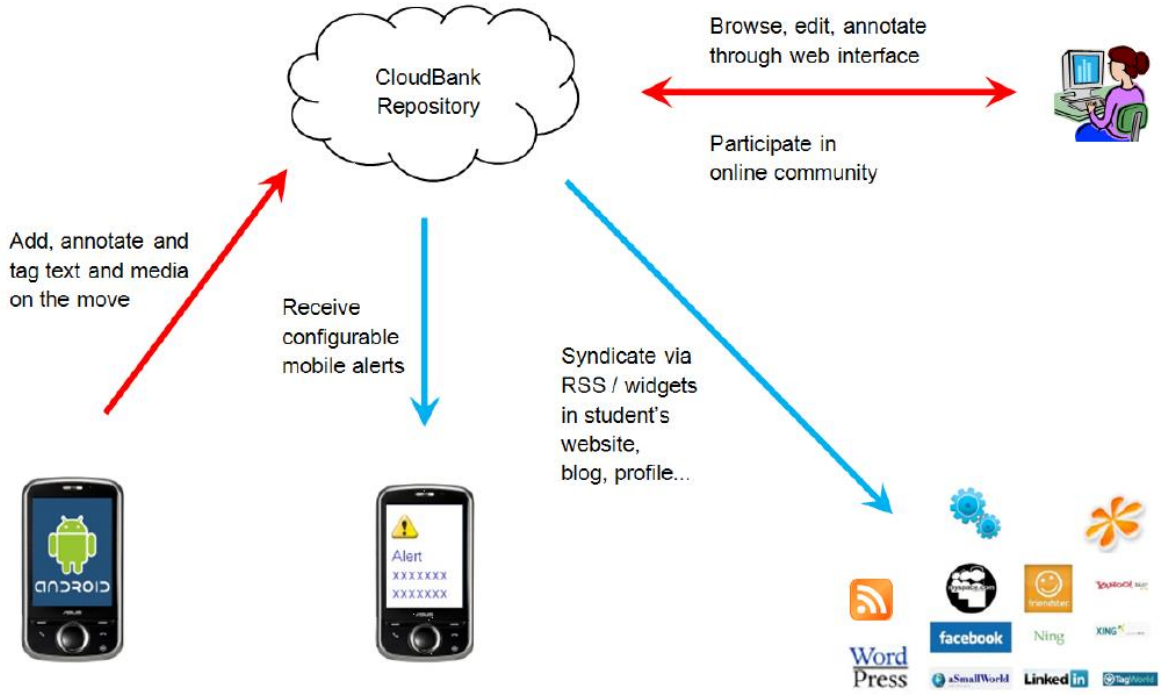


Figure 4: System architecture (Source: Pemberton et al. 2009)

Manuela	Brazilian, female, art history, undergraduate student, moderate use of English language social networking sites, moderate phone user
Khalil	Jordanian, male, masters student, engineering student, high use of English language social networking sites, high end phone user
"Maggie"	(anglicised chosen name), Chinese, undergraduate, interior design student, uses Chinese social networking site, basic phone user
Keichi	Japanese, male, masters student, international marketing studies, does not use social networking sites, high end phone user.

Table 1: Personas with selection of features (Source: Pemberton et al. 2009)

Within the LLOM project not only questions on who is allowed to upload which kind of content for which purpose and in which quality, but, of course, also the choice of the

type of crowd-sourcing platform is critical. Blohm et al. (2018) distinguish four types of crowd-sourcing platforms (see Figure 5).

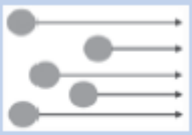
		Aggregation of Contributions	
		Selective contributions (the value is derived from individual contributions)	**Integrative contribution (the value is derived from the entirety of all contributions)**
Diversity of contributions	**Homogeneous** (contributions are characteristically identical)	**Microtasking**  • Highly pre-determined and qualitatively identical contributions as result of simplistic tasks • Goal: Scalable and time-efficient batch processing of tasks • Good use: Processing simple and repetitive tasks (e.g., categorizing data, translating text, correcting text); human computation; processing large amounts of information • Examples: Facebook Translations; Amazon Mechanical Turk; Galaxy Zoo	**Information Pooling** • Additive aggregation of distributed information • Goal: Integration of diverse opinions, assessments, predictions, or other information of contributors • Good Use: Evaluating and selecting alternatives; market research; eliciting and validating customer needs; approval contests; forecasting; user engagement; gathering location-based information • Examples: Mountain Dew Dub the Dew; Hollywood Stock Exchange; AT&T Mark the Spot; Google Maps
	Heterogeneous (contributions differ in nature and quality)	**Broadcast Search** • Contributions reflect alternative solutions to the same problem of which the most promising ones are going to be selected • Goal: Gaining alternative insights and solutions to problems from "outsiders" • Good use: Challenging technical, analytical, scientific, or creative problems; parallel execution of complex tasks with minimal margin for errors (e.g., software testing, patent analysis); on-demand acquisition of specialized talent • Examples: General Electric Ecomagination Challenge; Netflix Prize; Applause; InnoCentive	**Open Collaboration** • Contributions of limited individual value are aggregated to an entire whole by means of collaboration among contributors • Goal: Creation of complex artifacts that require the integration of distributed knowledge and skills • Good use: Collaborative ideation; knowledge creation; wikis; user communities; customer support communities, open source software, and other open projects • Examples: OpenIDEO; LEGO Ideas; IBM Apache Community; Wikipedia; Fiat Mio

Figure 5: Four types of crowd-sourcing platforms (Source: Blohm et al. 2018, p. 126)

Class	Governance Mechanism	Description
Task Definition	Task Modularization	Dividing tasks into (a multitude of) fine-grained subtasks
	Contribution Requirements	Define contribution requirements that the crowdsourced contributions must fulfill
	Pretesting	Pretesting tasks with a small group of contributors
Task Allocation	Skill-Based Allocation	Restricting the group of participating contributors by personal skills (e.g., languages or qualifications)
	Demographic-Based Allocation	Restrict the group of participating contributors by demographic characteristics (e.g., gender or age)
	Performance-Based Allocation	Tracking a contributor's performance of solving tasks and restricting the group of participating contributors by means of past performances
Quality Assurance	Manual Control	Manually validating the contributions of contributors
	Automated Control	(Partially) automating quality assurance by mechanisms that countercheck contributions
	Peer Assessment	Providing functionalities by which contributors can verify the validity of contributions
Incentives	Payments	Offering financial remuneration for successfully completing a task
	Prizes	Offering cash or non-cash prizes for the "best" or the "first" contribution(s)
	Reputation System	Providing functionalities that signalize a contributor's experience, activity, and merits
	Framing	Framing the task so that it increases in importance for contributors (e.g., contributing to greater good)
	Feedback	Providing contributors with qualitative and/or quantitative feedback regarding their contributions
	Socialization	Implementing opportunities for direct communication and interaction between contributors such as forums, chats, social networking, or messaging
Qualification	Peer Coaching	Providing mechanisms with which experienced contributors provide advice to new contributors
	Tutorials	Offering text- and/or video-based trainings as well as instructions on how to solve ideal-typical tasks
	Onboarding	Providing sample tasks with which contributors are trained for contributing on the crowdsourcing platform
Regulation	Non-Disclosure Agreement	Legal regulations in order to maintain confidentiality of crowdsourced tasks and related information
	Netiquette	Establishing formal and informal rules of participation as well as terms of use with respect to desired behaviors of contributors
	Authentication	Verifying the identity of newly registered contributors

Table 2: Governance mechanisms for crowd-sourcing platforms (Source: Blohm et al. 2018, p. 128)

Depending on the selected user scenarios within the LLOM project, a single or combined type of crowd-sourcing platform can be chosen. However, for language learning purposes, for the collection of tasks and linguistic features in a creative way, the type “open collaboration” or “broadcast search” could be useful. The options of “microtasking” or “information pooling” appear to be rather apt for less complex issues than language learning. In addition, the authors identified 21 governance mechanisms for crowd-sourcing, which help to set up, organise and run a crowd-sourcing platform (see Table 2).

For further reading on implementation issues, Burston (2013) provides a very comprehensive annotated bibliography on MALL implementation research encompassing contributions from 1994 up to 2012.

2.5 Opportunities and limitations of mobile assisted language learning

Current research evokes many advantages and opportunities of mobile (language) learning, among them flexibility of time and location and instant access and connectivity. Often it is characterised as belonging mainly to approaches of informal learning settings (i.e. simply put, learning outside the classroom at any time), whereas it can also play an important role in formal education (Gaved & Peasgood 2017; Chwo et al. 2018; Pfeiffer et al. 2009). Other advantages and features mentioned in the literature are, for instance, Cheon et al. 2012; Viberg & Grönlung 2013; Sung et al. 2015; Hashemi et al. 2011; Kukulska-Hulme 2009; Al-Emran et al. 2016; and Pfeiffer et al. 2009:

- Interactivity
- Non-linearity
- Multi-functionality
- Immediacy
- Cost savings
- User-friendliness
- Easy access to place-based information
- Virtual access to study-relevant content
- Broad availability of mobile devices among students
- Context sensitivity
- Portability
- Generation, manipulation and organisation of information for teaching and learning
- Individuality
- Potential for playful and creative use
- Increased learner motivation
- Increased learner engagement and participation
- May support inclusion
- May reduce the digital divide
- Smooth transition between informal and formal learning/indoors and outdoors

However, we can also identify some limitations or threats of MALL which are partly based on the advantages mentioned above, but seen from another – the opposite – perspective. Some authors grouped them into three categories (Viberg & Grönlund 2013; Cheon et al. 2012):

1. Users' technical limitations, like small screens, low resolution display, inadequate memory, slow network speeds, lack of standardisation and comparability, battery issues, limited printing opportunities, fast out of date issues for devices.
2. Users' psychological limitations, like time lags in users' behaviour adaptation, persistence of habits (e.g. using mobile devices primarily for different purposes rather than for learning).
3. Users' pedagogical limitations, like the fact that instruction content and models in the mobile learning context are often still limited in terms of elaboration or the disturbance of students' concentration and progress due to the interruption of work in class.

Despite the mentioned challenges, recent studies mainly support the positive sides of using mobile devices for language learning purposes (Viberg & Grönlund 2013 & 2012).

2.6 Success factors for MALL projects

Naismith & Corlett (2006) identified “Five Critical Success Factors” linked to the success or failure of mobile learning projects in general:

1. Access to technology
2. Institutional support
3. Connectivity
4. Integration
5. Ownership

Based on the study of Naismith & Corlett (2006), Alrasheedi & Capretz (2015) collected and classified the following critical success factors in their meta-analysis on mobile learning in higher education in a broader sense:

Variables	CSF Categories
Availability	Technology
Accessibility	
Affordability	
Internet access	
Connectivity	
Choice of Mobile Devices	
Web 2.0 software	
Cross-platform capability	
Ownership	Management Support
Institutional Support	
Administrative support	
Assimilation with Curriculum	
User feedback	
Educator perceptions	Teaching Pedagogy
Technical competence of instructors	
Faculty commitment	
Develop assessment techniques	
User feedback	
Assimilation with Curriculum	
Learning community development	Learning Approach
User feedback	
Learner perceptions	
Technical competence of students	
User friendly design of content	
Assimilation with Curriculum	

Table 3: Critical success factors (Source: Alrasheedi & Capretz 2015, p. 45-46)

In our context of MALL, the research conducted by Stockwell & Hubbard (2013) delivers further useful insights. According to the authors, successful MALL projects respect the following "Ten Principles for Mobile Language Learning":

> "1. Mobile activities, tasks and apps should distinguish both the affordances and limitations in terms of the device and the learning environment,
>
> 2. Reduce multi-tasking and environmental distractions,
>
> 3. Planned push, but with learner controls,
>
> 4. Maintain equity,
>
> 5. Plan for a range of learning styles,

6. Be aware of how learners already use their devices and how they may need new skills,

7. Chuck the learning activities,

8. The task needs to fit the technology and the environment, but also the technology and the environment need to fit the task,

9. Learners should be taught how to use their devices effectively for language learning,

10. Provide motivational and preparation support for both teachers and learners."

Cacchione et al. (2015) grouped these ten principles into three different types: technological, pedagogical and organisational principles and they added a fourth category, the neuroscience aspect, in order to evaluate the app LingoBee:

"The main evaluation outcome can be summarised as follows: the key issue, at the crucial convergence between neuroscience and pedagogy, is how much the app can promote real contextual language learning, because this is the best kind of learning that mobile technology can offer and it is the most effective in terms of creation and consolidation of strong and stable neural networks. Beyond the specific results about LingoBee and the related suggestions about possible improvement areas, the value of this proposal lies in offering an open tool to perform pre-, in itinere and postintervention evaluation in case of new mobile language learning paths" (Cacchione, et al. 2015, p. 1265).

The meta-analysis by Chwo, Marek & Wu (2018) provides similar results. Three principles of successful MALL design were found, which are in alignment with the findings of Stockwell & Hubbard (2013):

1. MALL tasks should align with pre-existing uses and expectations of learners (habits in using mobile technology).
2. Affordances of MALL have to be studied carefully through thorough analysis and pre-testing to avoid access issues and motivational problems. It is necessary to identify the required outcomes of language learners first, "and then working backwards to identify the system components with the affordances to produce the observed or desired outcomes" (Chwo, Marek & Wu 2018, p. 69).
3. Short time MALL tests should be avoided. Studies should expand the period of investigation of MALL (test) use to more than eight weeks at least.

Concerning task design in MALL, Tai (2012) proposes a three step framework:

1. Pre-task phase (motivation to perform the task, preparation of learners and clear instructions)

2. Main task phase (generation of authentic interaction, discussion and negotiation among language learners: solving problems, conducting projects, making decisions)
3. Post-task phase (review and compare learning outcomes, feedback)

3 Empirical study

3.1 Experts' views

We define experts in the context of this study as persons working in the field of mobile assisted language learning (e.g. teacher trainers, supervisors, researchers etc.). They usually also teach languages, but are furthermore involved in MALL by leading/conducting research projects or publishing in this realm.

The main findings of the expert interviews can be summarised as follows:

- Traditional language learning apps focus on vocabulary acquisition and grammar which becomes boring after some time.
- Successful apps should combine a multitude of sources from realistic/authentic contexts.
- The main advantages of MALL are that it takes language learners out of the classroom and allows for accessing interesting language learning materials.
- MALL for language learners/students should be open access.
- One of the main deficits of MALL is that the apps usually fail to integrate skills. They are mainly suitable for reading and listening comprehension exercises; not for successful skill integration. This is due to the fact that usually there is no feedback function: *"I would stress the importance of feedback, the interaction, a meaningful interaction with somebody who knows, the expert person who is providing you with the activities, that you're on the right path, that you're doing the right thing, that you're going in the right direction."*
- Another disadvantage is the still existing digital divide.
- It is absolutely necessary to provide feedback in order to observe progress and enhance motivation.
- Language teachers need to be trained and supported to use (new) language learning apps/interactive technologies. Ideally, they should use the apps themselves (as language learners).
- In the context of MALL the following approaches to language learning are suitable: authentic contextualized learning, problem-based learning and project-based learning, simulations and scenarios, peer learning, social learning, collaborative learning and collaborative decision-making. Game-based learning is better suited for children and younger learners.

3.2 Language learners' views

3.2.1 Knowledge on existing mobile learning apps

The language learners interviewed can be described as quite heterogeneous in terms of age, language learning motivation and knowledge on mobile language learning apps. Some of them are familiar with only one app, others are experienced in three or more language learning apps and can identify advantages and weaknesses of each app. Below, we list the language learning apps mentioned by the persons interviewed.

- A Polish App
- Ankiapp (https://www.ankiapp.com/)
- Babbel (https://uk.babbel.com/)
- Duolingo (https://en.duolingo.com/)
- elon.io (https://elon.io/)
- Fluent forever (https://fluent-forever.com/)
- LEO's vocabulary trainer (https://dict.leo.org/trainer/)
- LinguaLeo (https://lingualeo.com/)
- Memrise (https://www.memrise.com/)
- Notch
- Tandem (https://www.tandem.net/)

3.2.2 Mobile language learning habits (situations, preferences)

Mobile phones are preferably used by mobile language learners for language learning purposes, especially outside home, i.e. language learners use the app on their way to university and work or back home, when they are waiting for or using public transport. Furthermore, students like to practice languages on the mobile phone between lessons and when the have free time. Depending on personal preferences, mobile phones are also used at home in the morning or in the evening, when having meals or simply when going to bed or getting up. However, some users prefer their **laptops or personal computers**, as, for instance, typing is seen as being too laborious on the phone (e.g. when searching for special characters) or too easy because of automatic proposals offered by the mobile device. The **variety of situations** is in fact large. Some of the respondents answered that they would use their mobile phone for language learning purposes constantly at any time of the day or whenever they get a notification to do so.

As for **preferred exercises or content**, findings seem to differ according to individual language learning styles and strategies (Oxford 2003). **Language styles** are seen in the literature about second or foreign language learning as language learners' individually preferred ways of learning (see chapter 2.3) and they refer e.g. to different sensory preferences, personality types and the desired degree of generality. In the empirical study conflicting styles were found. We interviewed persons with clearly analytic (clear preferences for structured grammar exercises and content on grammar) as well as persons with a holistic approach to language learning. We also

found preferences for auditory (favouring e.g. listening comprehension and feedback exercises), visual (using images and photos) and kinaesthetic/tactile (e.g. preferences for flash cards) learning styles.

As for the **learning strategies**, indirect ones (metacognitive, affective and social) were predominantly mentioned. Metacognitive strategies, like self-monitoring and self-evaluation (self-correction, feedback) need to be offered by language learning apps, affective strategies (rewarding mechanisms, games, quizzes) and social strategies (possibility to contact others, asking questions for clarification, "speaking with the counterpart") are especially relevant. However, direct strategies, like memory ones seem to be also very crucial in the context of MALL (clear preferences of the respondents for "learning expressions", "vocabulary training with reminder function").

As most disliked activities, the following examples were mentioned:

- Speaking – "repeating a sentence" (app does not recognize voice)
- Speaking, because it is the most difficult thing for beginners
- Boring activities (e.g. grammar exercises from a book)
- Exercises where you have to assign words to something else (not useful for language learning purposes, especially when too easy)

3.2.3 Language learners' motivation for mobile language learning

Our respondents learned **various languages** via MALL:

- Arabic
- Czech
- English
- French
- German
- Greek
- Polish
- Russian
- Spanish
- Turkish

However, not all target languages were available. This is especially true for languages with less "prestige" and a limited number of speakers (e.g. Serbian, Bosnian, and Croatian), as compared to larger speaker communities and their languages, e.g. French). One big disadvantage of many language learning apps mentioned by respondents was that first languages were not available as course languages which is especially true for smaller languages (e.g. Serbian – French was not available; instead, language learners had to switch to English – French). Participants, in general, revealed to be fond of using language learning apps and planned to learn other languages in the future via mobile language learning, e.g.:

- Arabic

- Croatian
- French
- German
- Italian
- Serbian
- Spanish

The **main motivation** for mobile language learning was quite diverse among respondents. Main motives can be grouped according to specific language learning purposes (“improve language skills”, “improve vocabulary”, “interest for grammar and linguistic structures”, “understanding written communication”, “understanding everyday oral communication”), features linked to MALL (“it is easier for me”, “user-friendly”, “because it is free”, “because I can use it everywhere”, “no costs”, “flexibility”), and personal preferences/external reasons (“study abroad”, “opportunity to understand different cultures”, “no time for traditional language course”, “sort of personal challenge”). Regarding the sustainability of using MALL for language learning purposes, we found various **reasons to quit** among the participants of the study:

- Too many repetitions (of new words)
- Too simple phrases at the beginning (instead of offering longer texts)
- Being offline (no backups, lack of availability)
- Too many notifications (instead of a subtle reminder)
- Not offering a variety of authentic materials (like songs, films, current materials that are interesting for young people)
- Missing interactivity
- Impatience
- App menu too complicated/not appealing

The stamina to use MALL and consequently the length of experience in the use of MALL varied between three months up to seven years among participants of the study.

3.2.4 Language learners’ views on blended language learning

MALL users have positive attitudes towards blended language learning and they usually combine their language learning via apps with other approaches and methods of learning a language. For instance, they tend to apply classic methods (consulting books for grammar, borrowing language books from the library, reading books, writing letters/texts using paper and pencil or attending, in addition, traditional language classes at university or other institutions) or they practice with other online tools at their disposal like:

- Youtube channels for learning a foreign language (e.g. “français authentique”)
- Videos, podcasts (listening and repeating)

- Listening to music
- Watching TV series
- Leo – vocabulary training
- Tandem partner (online or personal)

Generally, student respondents see a need for combining mobile language learning apps with other language learning approaches in order to become more proficient in a foreign language. They answered as follows:

- Yes, for higher levels (higher than B1)
- Yes, you should have the possibility to ask a professional, if you face problems
- Yes, e.g. from watching TV series you get the intonation, short phrases and practical things
- Yes, for learning typical phrases
- Yes, for being creative in own writing process
- Classroom language learning is for having conversations; apps are mainly for other purposes

They also develop ideas for combination/integration of MALL into classroom language teaching:

- Teacher can give some tests in apps
- As homework: exercises
- 5 minutes before the end of the class: game
- At the beginning or at the end of class: pick up the phone and practice, and then practice at home (as a suggestion)
- Typing a personal vocabulary list into the app

The students stress some reasons in the interviews regarding the positive impact of the integration of MALL into classroom language teaching, for instance that teaching becomes more dynamic and creative, that nowadays no one wants to learn languages only with books and that it is therefore even necessary to use these new techniques in class.

3.2.5 Needed mobile language learning apps' features

According to the respondents, MALL should offer several basic and additional features, among them:

- Simplicity of use
- Exercises you can do by yourself
- Instead of translation: more pictures/photos of searched term
- Possibility to check own performance after doing an exercise
- Early success (first vocabulary, being able to build simple sentences)
- Different target groups/types of users to be distinguished by the app
- Reminder function for content that you practised a long time ago

- Gamification (reminder, bonus, praise, pressure to correct mistakes – repetition)
- Different levels (as part of gamification), providing the feeling of progress
- Possibility to contact other users
- Comment function for native speakers or linguists/language teachers (explaining sentences, grammar structures etc.)

In the opinion of the interviewees, mobile language learning apps are especially useful **for training all four competences**, i.e. writing, listening, speaking and reading, each of them with checking function in the app, as well as for fulfilling comprehension **tasks**, doing vocabulary training (including learning new/modern and slang words), grammar **exercises** (e.g. verbs, tenses), exercises for filling in the gaps (e.g. while listening to a song), games, or watching videos to answer questions afterwards.

Respondents had a lot of ideas for **improvements** of existing apps and how to make them more attractive:

- Little test before the start (different levels, option to skip some things)
- Huge variations of tasks/material
- More exercises for expressions
- Everyday life expressions
- Origin of words (etymology)
- Cultural knowledge
- Finding a solution for typing special characters quickly (e.g. Greek letters)
- Tandem partner or artificial intelligence partner

3.2.6 Individual language learning needs and attitudes

On the one hand, language learners appreciate various features and options of mobile language learning (**positive qualities**):

- No costs
- Easy to use
- I can practice almost everywhere at any time
- I don't have to go physically to a class
- Everybody has access to it
- You can choose what you want to learn
- You can choose the right app for your personal goals
- Positive surprise that language learning is possible in this way
- The apps insists on a section, you are forced to improve
- Interactive learning
- Meeting new people
- Practice the language at basic level with someone who understands the problems of beginners
- Having improved my listening competences

- Having learned a lot of words
- So easy to learn vocabulary
- Having the possibility to use these apps

On the other hand, they also identify some **negative aspects** of mobile language learning:

- It is only for beginners
- Examples are not authentic, e.g. “I eat an apple”, “The elephant drinks milk”
- Too easy, too slow progress
- Bad conscience, if I do not practice (when having free time)
- You cannot ask the teacher, the mobile phone/app does not answer
- Too many reminders/notifications
- Too much automatic correction on the mobile phone: one is getting lazy
- Too much tolerance of typing mistakes (accents), too liberal
- No continuous progression of difficulty between different levels (leaps are either too small or too big)

Regarding the fit of MALL for different **levels of linguistic proficiency**, the opinions among students vary: For some it is mainly appropriate for beginners or for beginners up to B2, for others it is useful at the beginning (A1) and at the end (B2/C1) or for all levels, but C2 (which is not offered yet). More differentiated views make the answer dependent on the app: there are apps for A1 or A2, others from A1 to B2/C1, or tandems from A1 to C2.

Linked to the learning content and the structure of exercises, apps prepare for distinct **future situations** in which learners should be able to perform in the target language. According to the respondents, apps should prepare for:

- Everyday life
- Understanding current language (but not for learning specific vocabulary, e.g. working in a company)
- Speaking with a foreigner, to listen and understand what is said
- Sophisticated writing
- Having advanced grammar skills

3.2.7 Language learners’ ideas on a crowd-sourced approach to language learning

Language learners are familiar with the idea of crowd-sourcing and they are able to transfer the concept to the realm of mobile language learning. They identify a lot of **suitable content elements and language learning materials** which would be appropriate for a crowd-sourced approach:

- Vocabulary, e.g. individual vocabulary sets
- Reading comprehension exercises
- Little pieces for listening

- Authentic texts or exercises (letters, electronic letters, skype, video chat)
- Good explanation of grammar, including useful exercises
- Videos (e.g. best or most watched)
- Videos about things that confuse people or contain everyday expressions
- Songs
- Films

They also have individual preferences concerning the kind of content they would like to upload themselves ("Vocabulary or short texts with some questions to verify the comprehension of the text"; "Everything I build myself"). Furthermore, they indicate benefits and possible challenges of a crowd-sourced approach:

Benefits of a crowd-sourced approach:

- Variety of sources
- Not making the same exercises all over again
- Being more comprehensive with language learners
- Getting to know the "true" language from "ordinary" people
- Current language

Challenges of a crowd-sourced approach:

- Who checks the mistakes
- Quality of materials
- Not so apt for introvert persons who do not want to connect
- Speed of internet
- Regional linguistic varieties

3.3 Language teachers' views

3.3.1 Knowledge on existing mobile learning apps

The language teachers interviewed teach mainly foreign languages at universities and/or schools. They can be described as quite heterogeneous it terms of knowledge on mobile language learning apps. Some of them never used mobile language learning apps for own language learning purposes, others are even familiar with three or more language learning apps and can identify advantages and weaknesses of each app. However, they are all experienced with using online material for their own language teaching classes/courses. Below, we listed the language learning apps known by the teachers interviewed:

- Babbel (French)
- Duolingo
- Quizlet (English)
- Padlet
- Socrative

3.3.2 Mobile language learning habits (situations, preferences)

As for their own language learning habits, language teachers prefer to use **tablets, mobile phones** and **laptops**. They usually practice at home (e.g. in the evening), when using public transport or before the exams.

In contrast to the students interviewed, language teachers in this study favour more traditional language learning content elements and exercises. They seem to have more conservative and restricted views on the possibilities offered by MALL. Below we list their answers:

- Exercises for pronunciation
- Listening comprehension
- Lyrics training
- Vocabulary tests
- Grammar
- “Fill in the gaps”
- “Match the words with the definition”
- “Put the words into the sentence”

As most **disliked activities** the following examples were mentioned by language teachers:

- Writing (because apps do not recognize every right solution)
- Reading comprehension

3.3.3 Language teachers’ motivation for mobile language learning

Our interviewed teachers learned **different languages** via MALL. It is worth mentioning that the variety of languages indicated is much more limited compared to the students' answers (see chapter 3.2.3):

- French
- English
- German
- Spanish

Among the teachers it was also noticed that not all target languages were found in language learning apps (e.g. Arabic).

The **main motivation** for mobile language learning among teachers was linked to the specific features of MALL, especially concerning the quality of time saving (“A quick solution for language learning needs”; “No time for a traditional language course”). In addition, it is remarkable that in some cases teachers first use it for their own teaching and then decide to practice their own language learning via MALL. The respondents disposed of MALL experience between 1 and 2 years.

3.3.4 Experiences as a (mobile) language teacher

The interviewees teach foreign languages in the following target languages:

- English
- German
- Spanish

Their **target groups** are adults (e.g. university students, adults in private education) and children. Until now, they have been mainly integrating **traditional online material** in their own classes (e.g. presentations, videos, university interactive pedagogical spaces, any material from the internet).

They consider as **useful elements** of MALL, with regard to their desired **learning outcomes**, the following MALL contents/materials:

- Basics of language
- Grammatical structures (e.g. verbs, endings, grammatical concordance)
- Vocabulary, terms
- Orthography and correction
- Comprehension of content

Some of the language teachers use MALL for their teaching in a more strategic and purposeful way:

- Exam preparation
- Content preparation
- Quick feedback function
- Revision
- Control

They especially value, in this context, the following features of MALL:

- Authenticity of documents
- Attractiveness/appeal to students

However, they also name some **obstacles** they face when using mobile language learning apps in the classroom, usually connected to external conditions, behavioural issues of students or attitudes towards MALL:

- Time restrictions (When can I use it?)
- Not everyone has a mobile phone
- No (or bad) internet connection
- No access to WIFI
- Lack of discipline in class
- No guidance for students
- In opposition to active and creative learning
- Not everyone is willing to use the mobile phone in class

To overcome possible obstacles language teachers developed some ideas. To handle time management in class, a good and consequent course planning (e.g. 15

minutes app learning in every session) could be a solution. Of course, getting more time for teaching could solve time restriction issues even better. They also proposed to have smaller groups of students in the future, but both additional time and fewer students are not frequently opportunities that are realistic in educational settings. In order to tackle technical problems and also discipline issues, a newly created app that can be used off-line would be an option.

Language teachers are keen on the perspective to **enlarge the use of mobile language learning apps in the classroom** in the future. However, in this case they see a need for seeking a balance between direct communication/interaction and mobile language learning. Sometimes, they also lack the possibility to do so (e.g. for legal or technical issues), but otherwise they would be keen to integrating MALL into their course design. Moreover, the respondents see, to some extent, a need for blended learning in order to inform and encourage language learners and make them use mobile devices outside the classroom for language learning purposes.

3.3.5 Language teachers' views on blended language learning

The language teachers interviewed use the following mobile learning apps for teaching purposes:

- Babbel
- Duolingo
- Padlet
- Quizlet (A1-B2)
- Socrative

They generate a lot of ideas for combining their face-to-face teaching with MALL. The MALL elements integrated in class refer partly to the stipulated MALL **contents/materials** above. Partly, the ideas are linked to alternative forms of organising learning processes (e.g. enhanced cooperation between students) or they highlight the **special features** and possibilities of MALL (e.g. gamification, crowd-sourcing).

- Vocabulary training, translation (e.g. Quizlet)
- Using online dictionaries
- Listening tasks
- Lyrics training (karaoke)
- Grammar (e.g. Socrative)
- Preparation for exam (e.g. Socrative)
- Homework
- Handing out a list mentioning mobile learning apps in the target language (recommendation for learning at home on a voluntary basis and direct communication in class)
- Idea of competition (e.g. Quizlet, Socrative)
- Working in pairs (e.g. Quizlet, Socrative)

- Integrating elements of gamification (apps, cards, products etc.)
- Crowd-sourced approach, sharing content, writing for others (e.g. Padlet)

3.3.6 Needed mobile language learning apps' features/content

Language teachers mainly bring up content elements or ideas for exercises when asked about helpful features for their own course design. They mention **authenticity** as a basic feature that is absolutely needed when it comes to vocabulary training. A wide range of offered **vocabulary** which should be divided into subthemes, a variety of words/terminology **in authentic contexts** and (real world) context-related dictionaries are claimed by the teachers.

3.3.7 Useful mobile language learning apps' features/exercises for own course design

As for learning **activities/exercises** that are usefully performed via MALL, language teachers have a quite traditional view:

- Filling gaps
- Asking questions, giving answers, linking sentences
- Definition of words
- Pronunciation (listening tasks with repetition and possibility to check correctness)
- Providing increased information: being more specific on some topics
- Performing real communicative situations (useful for students in the future), e.g.:
    - Situations in café
    - Shopping
    - In the street
    - "Mobile" walk in a city to an attraction ("Google maps" in target language)

In line with the students' views, the language teachers also had a lot of ideas for **improvements** of existing apps in order to make them more attractive. Their proposals mainly concern the enrichment of training to speak or to pronounce and authenticity issues, as well as the topic of official recognition of developed competences:

- Simplicity (everything visible at first glance)
- More verbal/oral communication
- Improved correction function (e.g. of pronunciation exercises)
- No obligation to write everything (more speaking exercises)
- More authentic pronunciation
- No artificial dialogues
- More authentic situations/communication
- Official recognition (certification)
- Optional exam

3.3.8 Individual language learning needs and attitudes

Similar to the language learners, language teachers value some features and options of mobile language learning and teaching (**positive qualities/aspects**):

- It is something new
- Different approach to language teaching
- It shows that the teachers are up to date
- Diversity of activities
- Integration of game, competition, cooperation in pairs: motivational potential
- Additional documents to work on, additional resources
- Enhanced dynamics in class
- Fun for kids (they concentrate, because they look forward to the game)
- Adults feel more involved
- One can do it also alone at home

However, they also find some **negative aspects** of mobile language learning and teaching which they mainly refer to as potential obstacles to – and difficulties in – their current teaching practice:

- No additional technical support: it is time consuming to know all the apps/learning platforms etc.
- Technical problems (e.g. internet connection)
- Too time consuming
- Based on students' individual effort
- No eye contact with students

According to the language teachers' views, MALL fits essentially low and medium **levels of linguistic proficiency**, but they stress that grammar exercises might also be apt for higher levels. The major problem they identify at higher levels is that they doubt that free communication and discussions are feasible via an app and that they do not see any possibilities as to how to correct mistakes and give/get feedback. In addition, they believe that MALL is, basically, excellent for training all crucial linguistic competences, i.e.:

- Listening
- Pronunciation (challenge: free talking – correction?)
- Reading
- Speaking
- Writing (if app corrects mistakes)

Referring to the achievability to **evaluate students' competence development**, teachers' opinions vary. Some think that evaluation of competence is not the goal in the context of MALL. However, they consider evaluation possible, as apps are conceived to assess different linguistic levels and are principally able to check writing, listening and reading.

Concerning the **preparation for future situations**, the language teachers keep their suggestions within their professional role:

- For exam preparation
- For practice (before starting the new year)
- For simple conversations (e.g. greetings, in the restaurant, in the shop)

3.3.9 Language teachers' ideas on a crowd-sourced approach to language learning

Language teachers are partly familiar with the idea of a crowd-sourced approach to language learning. They highlight some examples of their teaching materials which contain elements of crowd-sourcing. They use, for instance:

- Blogs
- Different learning platforms of their institution
- Padlet (for assignments, projects, like e.g. photos of a summer holiday with subtitles, information on a country, presentation of own holidays, self-presentation, preparation of cultural aspects …)
- Quizlet
- Wikis

They cite various **suitable content elements and language learning materials**, which could be also suited for a crowd-sourced approach to language learning:

- Cultural topics, gastronomy
- Every content as long as it is useful
- Grammatical materials
- Own experiences (e.g. ERASMUS)
- Presentations (e.g. of one Spanish-speaking country, of a partner university)
- Presentations with pictures, flash cards etc.
- Translation of relevant content of a website
- Videos

Some of them can imagine uploading own content, like e.g.:

- Topics on languages for specific purposes (LSP), like the field of finance (e.g. 3 minutes on a specific finance issue, training listening competences; the challenge would be that it is complex and time consuming; it is also hard to keep it up-to-date)
- Exercises which improve speaking skills, random questions, pictures, flash cards, handouts, exercises with grammar etc.

Asked about the **benefits of a crowd-sourced approach**, language teachers offered comments on the potential benefits, if the principle of crowd-sourcing is managed properly. They also identify advantages for both language learners and the teachers themselves:

- Educating
- Enhancing collaboration and learning from each other
- Learners are often more open to content from peers
- Learning how to create own teaching material
- Time saving
- Very wide range of documents, and therefore the possibility to select different exercises and documents

Language teachers easily found **possible threats or challenges** connected with a crowd-sourced approach to language learning. They perceive the work with MALL in their teaching context as too time consuming, they fear negative feedback about their own material from the community, they are afraid of using materials with mistakes and they doubt that there would be enough technical support and coaching for teachers, which is even worse considering their time restrictions concerning class preparation.

4 Conclusions and recommendations

Referring to section 2.1.4. in this paper, we plead within this project for a task-based language learning (TBL) approach which integrates situated, authentic and contextualised language learning. In this perspective, the achievement of meaningful tasks is vital, language learners are enticed to solve problems of their everyday life where successful communication is central. It is a learner-centred approach which focuses on authenticity of language use, self-efficacy and motivation in new, real-life communicative situations with feedback from peers and experts. The elements of the approach should be supported by the possibilities of crowd-sourcing as outlined before.

4.1 Best practices

Based on the chosen language learning approach in this project and the outcomes of the interviews and the literature review, we can recommend a multitude of suitable exercises and activities, which would be feasible in a crowd-sourced approach to language learning. Which of them should be chosen in the context of this research project is subject to strategic decisions about the main target group of the project and the future app. According to this empirical study, exercises for training all **basic competences (listening, speaking, writing, reading)** can be included under the condition that there is the possibility to check the answers, to get the reaction of a counterpart or feedback from peers and teachers in the community.

As for **traditional exercises** in the context of MALL, activities in the following domains are still advisable:

- Vocabulary training
- Learning expressions
- Exercises for understanding/comprehension
- Exercises for pronunciation
- Grammar exercises
- Asking questions, giving answers, linking sentences

Considering the potential and necessity to **introduce elements of gamification** not only in the overall handling of the app but also into the exercise structure/design, it is highly recommendable to offer different kinds of games and quizzes etc. in order to train the above mentioned linguistic competences.

However, the **focus of the app** developed in this research project should definitely reside on the possible **benefits of a crowd-sourced approach to language learning**. Having said this, exercises and activities have to be developed so as to strenghten the technical and structural possibilities of crowd-sourcing – but always keeping in mind the necessary features listed in the next section. In addition to what was listed in the previous sections, we propose specific exercises in the following realms:

- Watching videos/photos and answering questions

- Lyrics training, audios
- Exercises for filling in the gaps while listening to a song/audio
- Learning new, slang words
- Languages for specific purposes (LSP)

The design of the overall app as well as the design of activities should respect, in particular, the features documented below:

- Simple to use, being user-friendly
- Allow contacting other users
- Elements of gamification
- Principle of authentic material
- Modern language
- Interesting/relevant topics
- Use of modern technology for learning purposes
- Different target groups/types of users to be distinguished by the app
- Offer exercises you can do by yourself
- Possibility to assess own performance after doing an exercise

4.2 Quality requirements for the future

Concerning questions of quality and specification, the following findings mainly based on the experiences of language learners and teachers with existing language learning apps are listed. They treat **linguistic specifications and language learning approach, options for linking, formal and technical requirements**:

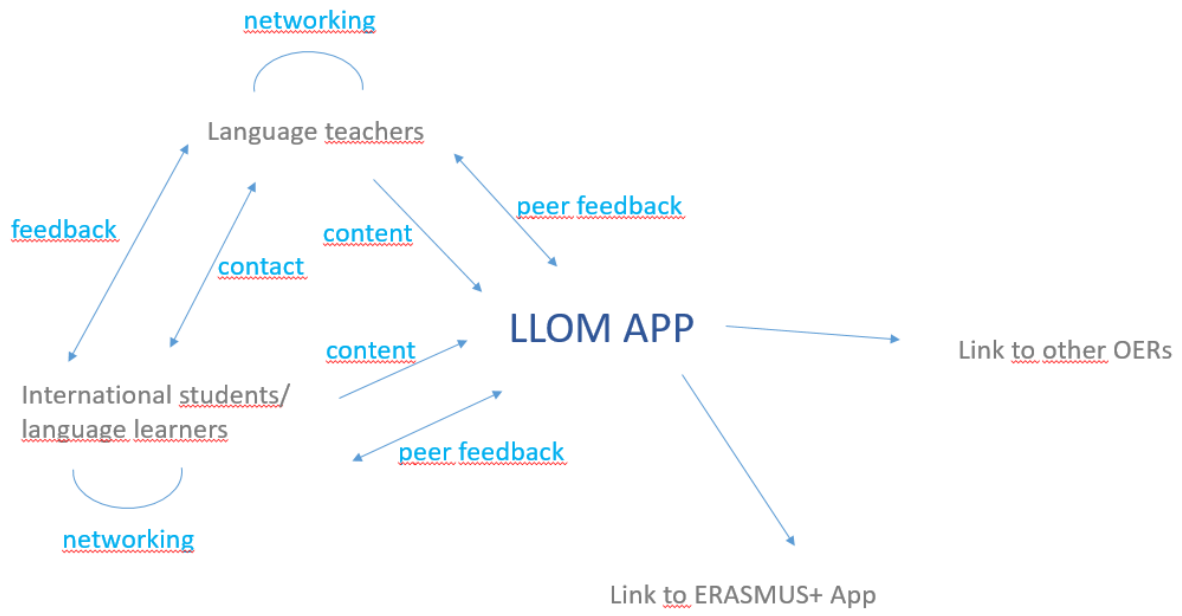
- App should be more authentic (in expressions, talking speed, …)
- Real communicative situations (useful for students in the future)
- Regional linguistic varieties to be included (e.g. for German, Italian)
- Different entry levels (individual skipping of exercises/topics etc.)
- Being able to choose topics individually etc.
- Being more specific on some topics
- Learning grammar in the right order, not only vocabulary
- Option: Explaining grammar
- Option: Including a dictionary
- Recognition (optional exams)
- App should recognize different versions/linguistic varieties and typing mistakes
- App should recognize voice
- Possibility of offline use

4.3 Recommendations for a crowd-sourced approach to language learning

As underlined already, the special opportunities that a crowd-sourced approach to language learning offers should definitely be seized. Below, we summarize major aspects and principles to take into account:

- The LLOM App should offer a variety of **authentic materials** (songs, films, current materials that are interesting for young people/international students/language learners).
- The principle of interactivity should be exploited. Contacts between language learners as well as between language teachers should be feasible. In addition to meeting feedback needs of students, contacts between language teachers and language learners should be made possible.
- It is highly recommendable to include learnings and experiences made by using existing offers, e.g. Padlet, Tandem, LingoBee etc. Their benefits should be extended and their drawbacks avoided.
- The correction and feedback function should be elaborated.
- It is indispensable to have a code of conduct (how to give feedback, required quality or nature of material being uploaded etc.) for community members. They should comply with it when registering.
- Technical support and survey/control over contents must be organised.
- A contact and comment function for different groups of speakers (native speakers, language teacher etc.) should be included.

Based on the definition of the target group in this project and on basic consideration, the underlying key structure of the LLOM App could have the following design:



Source: own design (2019)

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