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Practicum management and enhancement through an online tool in foreign language teacher education

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ABSTRACT

Practicum is an essential and meaningful part of teacher education but due to the great diversity of educational programmes worldwide, their nature and quality depend too much on each particular situation. There is an urgent need to unify and upgrade practicum formats. This paper reports a proposal for technology enhancement and structure reconfiguration of the practicum within the wider curricula. Added to that, we present an Interactive Digital Notepad (IDN) prototype, based on Kanban and powered up by Trello, as an optimal solution to the challenges posed in practicum management in foreign language teacher education programmes. Circumscribed to the Spanish educational context, this IDN is an online tool designed to improve the monitoring of the learning process in order to foster interactive and effective communication among the participants, and to promote critical thinking and autonomy. Results are promising and further steps for further improvement and implementation are outlined.

1. Introduction

In Spain, Initial Teacher Education (ITE) programmes are regulated in the form of a one-year Master's degree offered by universities (60 ECTS). Students receive scientific-disciplinary training in their area of specialization (41 ECTS), followed by another training oriented towards professional practice known as practicum (11 ECTS), and a Final Dissertation (8 ECTS). The certificate is a requirement to enter the teaching profession in secondary education. The practicum phase has been acknowledged as an essential and a meaningful form of teacher training that provides student teachers with real classroom experiences and allows them to translate into practice the skills and knowledge learned during the teacher education programme (Kemmis et al., 2014; Zabalza Beraza, 2011; Canh, 2014). Added to that, the practicum supports socialization in the teaching community, evaluates teaching ability, stimulates the construction of effective teaching skills, throws the first seeds of teacher identity formation, provides a supportive field for experimentation, aids learners in gaining insights into new teaching perspectives, and increases motivation to continue studying (Hascher, Comobcard and Moser, 2004, p. 623).

Despite the importance of this sort of field training, it remains an underexplored learning opportunity (Canh, 2014). This is partly due to the great variety of programmes. Their nature and quality depend on the particular conditions of each educational context, which may limit or enlarge the student teacher's practice. Mobility is a key factor in the configuration of the Bologna Process too (Zgaga, 2008). Europe demands more and more internationalisation of education, and technological advances may prove useful for practicum development in different settings. It has been noted that this possibility may offer teacher candidates many benefits on both personal and professional levels (Lee, 2011).

Under the auspices of the Erasmus + Virteach Project, which seeks to improve foreign language Initial Teacher Training programmes by means of a Virtual Learning Environment, a survey with over 500 responses from 13 European countries confirmed the importance of practicum in foreign language teacher education. This study (Barros-del Río & Mediavilla-Martínez, 2019) revealed critical issues that deserve further explanation. First, an evident lack of unified formats for teacher training programmes at a European level. National agencies tend to work in each country separately, a malpractice that embeds ITE with an

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excessively local projection.[1] Second, international networks between higher institutions and secondary schools are uncommon, and when running, they require negotiations with cultural, pedagogical, and ethical challenges, resulting in significant limitations and voids in the training curricula at an international scale (Parr & Chan, 2015). And third, practicum mentoring should provide student teachers with feedback and follow-up support, help them become autonomous teachers, and include critical reflection and research orientation. All these shortcomings demand new forms of mentoring in a globalised educational context.

2. Literature review

The implementation of practicum abroad has been recommended as a meaningful and consciousness-raising opportunity, and recent research suggests that it would be particularly beneficial for foreign language student teachers (Cho & Peter, 2019). Added to that, Celen and Sumru (2017) insist on the need of more observation, seeing different school contexts, improvement in the assessment procedures and technology enhanced learning environments.

During this stage, pre-service students are usually keen on receiving critical feedback and constructive comments, and it has been demonstrated that these actions foster their willingness to address challenging issues (Kadushin & Harkness, 2014; Baird, 2015; Smith & Agate, 2004). Hence, flexibility and room for innovation stand out as key factors to enhance critical reflection and emancipation among student teachers. Collaboration between school mentor, university instructor and student teacher is key during the practicum, as several studies have demonstrated (Borko & Mayfield, 1995; Payant & Murphy, 2012). In this regard, collaborative settings where joint reflection takes place enable mutual learning and bring greater coherence to practicum (Mauri et al., 2019).

In response, Zabalza Beraza (2011) highlights the need for further use of ICT in practicum management, which should be integrated in tutoring, supervision, problem solving, introduction of analysis topics, evaluation, etc. Recent research has shown interest in this direction. Habibi et al. (2019) have positively assessed the impact of teacher educators' support to prepare future teachers of English with ICT integration in instruction. Furthermore, there is evidence that familiarity with ICT during training favours technology integration in the future (Larose et al., 2009). Regarding ICT and practicum in online settings, Song, Kim, and Zhao (2019) have assessed the utility of peer interaction, and the use of videos respectively.

The need to facilitate dynamic cooperation in the practicum demands the implementation of an agile project management approach. In contrast to the more conventional waterfall approach, the agile approach is more adaptive to changing circumstances and it is almost always suitable for small projects (Van Casteren, 2017). Also, agile projects focus on rapid value and response to change, while more traditional plan-driven methods, such as waterfall, lie on predictability (Boehm, 2002). Scrum and Kanban are powerful project management approaches (Lei et al., 2017). The Kanban method, known as "visual board", consists of a board with cards organized in different columns. Each board is accessible to all the team members. It allows freedom to define tasks to facilitate communication and transmission of tacit knowledge among its members. The benefits of this methodology are: task planning and managing workflow (to do, in progress, done), improvement of team work performance, and supply of visual metrics on activity. Scrum enables complex projects that require flexibility and speed to be developed. It allows management of errors that may appear during the performance of complex tasks through scheduled meetings:

Sprint Planning, Daily Scrum, Sprint Review and Sprint Retrospective. These options guarantee compliance with the established objectives and their combination has proven positive (Mahnic, 2014). Both Kanban and Scrum are easy to use and allow freedom for interaction or personal adaptation among users, two key aspects in educational contexts (Kniberg & Skarin, 2010). Furthermore, the Kanban board is a collaborative tool that can be easily integrated in VLEs such as edX or Moodle.

There is a wide range of software apps that implement Kanban boards. Özkan and Mishra (2019) provide a brief comparative perspective about the most popular project management tools among which Taiga, Axosoft, Agielan, Planbox, Jira, Trello, and VersionOne. Although all of them enable collaboration among team members, Trello is one of the most popular project management tools worldwide and it is quite appropriate to support agile learning with Kanban in teacher professional development (Parsons et al., 2018). Although Trello is close-source, it offers cloud (SaaS) distribution with free use license, is supported by mobile platforms, and is based on the Kanban approach. In addition, Trello is time-effective, tracks task cards well, and allows debates inside each card. Additional interesting features are integration with other apps, the use of checklists, and the ability to write comments and add attachments.

To the authors' knowledge, no literature is available on tailored digital solutions for mentoring foreign language student teachers' practicum in relation with the above detailed tools. Hence, this paper reports a proposal for technology enhancement and structure reconfiguration of the practicum within the wider curricula and presents an Interactive Digital Notepad (IDN) prototype, based on Kanban and powered up by Trello, as an optimal solution to the challenges posed in practicum management in foreign language teacher education programmes.

3. Practicum enhancement

In the light of these shortcomings, and within the frame of the Erasmus + VIRTEACH project,[2] this study proposes the integration of technology into the practicum of foreign language student teachers in two ways. First, we deem necessary to design a common structural organisation format for practicum within educational programmes. Second, we present a robust tool for mentoring and communication between student teacher, university instructor and school mentor, named Interactive Digital Notepad or IDN. These two steps will ensure that the practicum occupies the relevant place it deserves in the design of foreign language teacher education programmes and that it becomes a coherent, reflective, dynamic and enriching learning experience for all parties. In the following sections, a suggestion for homogenization in structure and procedure is presented. The objectives, structure and expected outcomes of the Interactive Digital Notepad online tool are detailed, too.

3.1. Embedding coursework practicum in VLE

In a constantly changing environment, foreign language teacher training requires not only permanent updating, but also homogenization of programmes so that accreditation and the recognition of qualifications are effective. During the pre-service stage, this issue can be solved by means of MOOCs and online courses. But a major challenge is found during the practicum, when communication and interaction between school mentor, university instructor and student teacher is essential. Moreover, the optimal design of practicum in a digital platform must adapt to its specific needs, namely a high degree of involvement on the part of trainers, a wide network of schools to welcome student teachers, and flexibility for adaptation to the particular needs of each student and

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[1] A previous comparative analysis of 27 initial language teacher education programmes in Europe recommended interesting actions to upgrade the language teacher education in Europe. For more information see Karatsiori (2014).

[2] For more information on the scope of the project and outcomes, see www.virteachproject.eu.

educational project. Online teaching platforms, such as edX or Moodle, lack specific instruments to work with the particularities of practicum. We propose externalisation through agile project management tools as a solution to integrate the customized Kanban-based e-Portfolios into course platforms of LMS (Learning Management System).

Fig. 1 shows a proposal for structural organisation and flowing interaction of a practicum model within an educational programme located in a Virtual Learning Environment (VLE). This structure, based on the proposal of López et al. (2010), offers a visual and public sequence of practicum organization, allocation and tracking. According to this model, practicum management is based on keeping three products updated: a list of current practicum and their corresponding student teachers, a list of practicum pending on assessment, and a list of previous practicum.

This progressive and dynamic system allows all the student teachers to work with a common template, which facilitates homogenization in structure and procedure. Another interesting aspect is that access to the Kanban board can be public and/or private. Public boards allow free access but only the registered members of each team, i.e., student teacher, school mentor and university instructor, can make changes. Also, access to previous practicum is granted so that current students can benefit from peer learning.

To a further extent, and together with the List of Current practicum, and the List of Previous Practicum, the VLE could implement other complementary learning resources, such as a FAQ (Frequently Asked Question) section, a Teaching Guide, and a contact forum which would be managed by the general coordinator of practicum to communicate practicum offers, assignation and evaluation issues. It could also be set as a useful tool for peer exchange, this being an instrument strongly defended by some experts (Crookes, 2003).

In general, a unified and standardized organisational scheme for practicum management in educational training programmes would be beneficial to supervisors, mentors and student teachers alike. Its implementation at a European level would favour coherence and mobility and it would facilitate practicum management and

performance in different settings.

3.2. Interactive Digital Notepad (IDN): a digital tool

Practicum management in foreign language teacher education programmes demands intense interaction and support among student teacher, university instructor and school mentor, in a relatively short period of time (Tomaš, Farrelly and Haslam, 2008). Practicum is a distinctive phase in teacher education where interactive and effective communication, critical thinking and autonomy are of essence. An effective response to these needs is the Interactive Digital Notepad (IDN), a prototype based on Kanban and powered up by Trello, and constructed by a team of two university instructors, a student teacher and a school mentor.

To secure coherent pedagogical principles, the orientation of the practicum and its IDN is informed following Graham Crookes' (2003) principles for professional development for language teachers, namely classroom observation and management, teaching and classroom techniques development, contextual interaction and social skills, and motivation (2003). The inclusion of these principles ensures that the practicum becomes a strong-training-effective-experience. Formally, this IDN incorporates Scrum for meeting management within a Kanban board and is organized in six lists: Diary, To do tasks, In progress tasks, Done tasks, Critical reflection on advancement and cooperation, and Evaluation, as Fig. 2 shows:

A list of weekly meetings under the heading "Diary", helps the student teacher describe tasks and face to face interactions carried out during each week. It is advisable that the student uses a structured description that answers the following questions: What did I do during this week? What problems did I encounter? How did I solve them? The information gathered in this column corresponds with Scrum's daily meetings structure. Scrum's concept of iteration or sprint is also found in two milestones within the practicum: the development of a Teaching Unit in the classroom, and the Final Report on the practicum. Eventually, these two digital products are completed through a series of tasks.
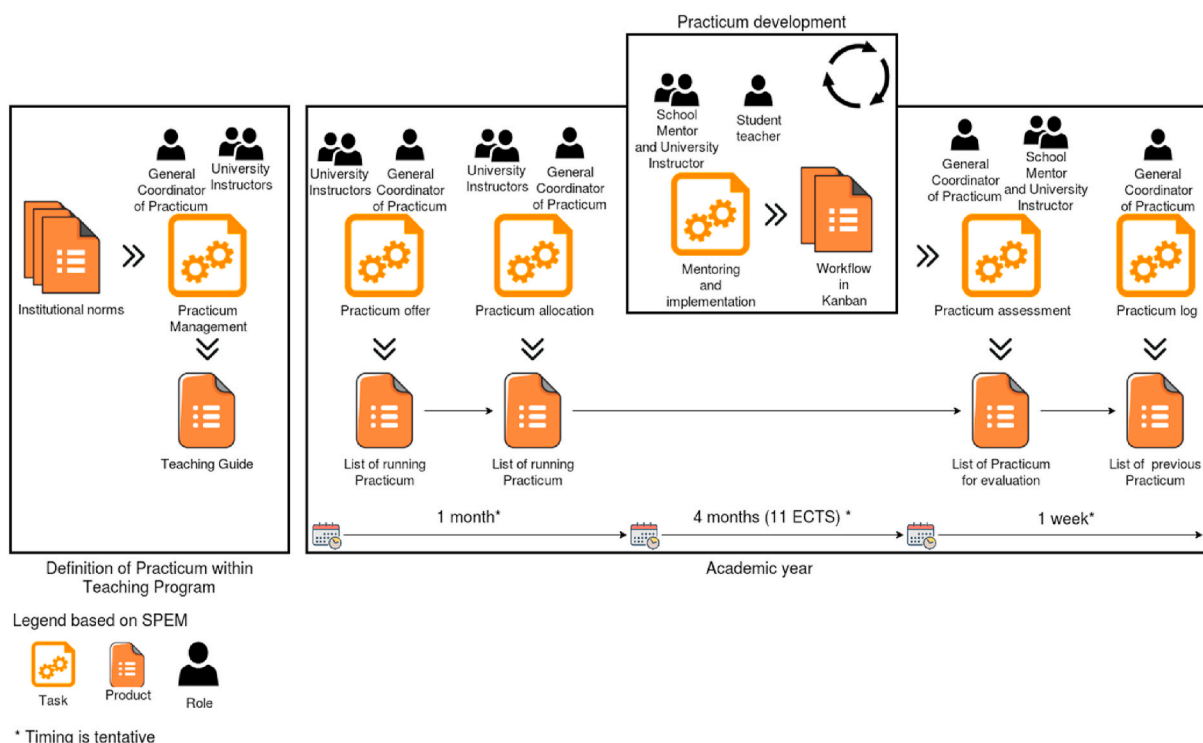

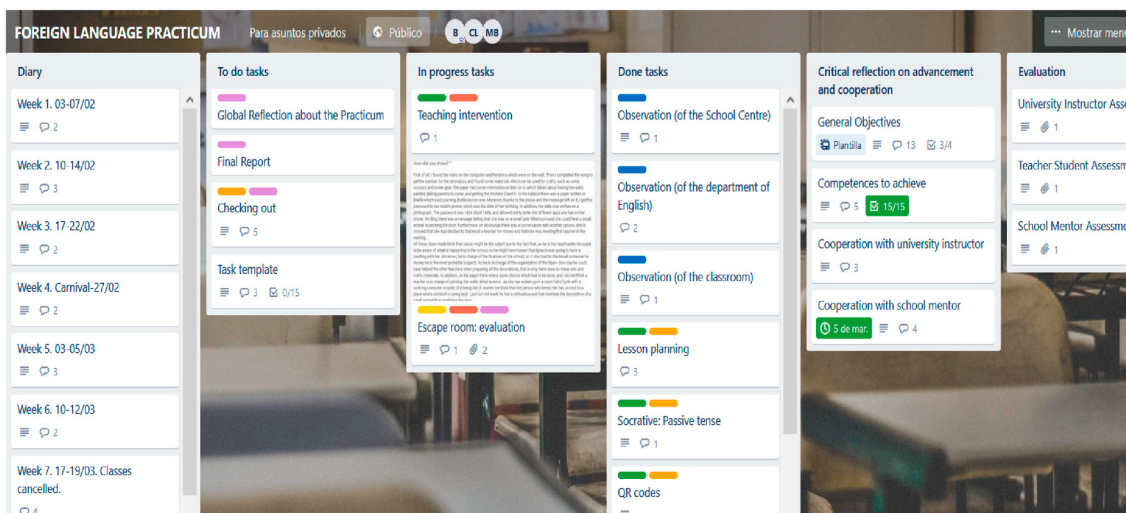**Fig. 1.** Practicum management modelSource
authors' design.

Fig. 2. Kanban board designed with Trello for practicum mentoring
Source: https://trello.com/b/QavMtgOz/foreign-language-practicum.

Each task can be associated with tags for classification purposes. These tags are: Observation, Evaluation, Implementation and Planning, which serve to point out the stage of progress of each activity, and Teaching Unit and Other Interventions, which clarify the kind of activity that is being done. The Kanban method is used to manage the tasks workflow through the lists: To do tasks, In progress tasks and Done tasks. Any activity and workflow is registered in Trello, including description, classification and comments. The student teacher accounts responsibility for the creative evolution of the tasks, as he or she has freedom to implement and modify activities. Also, the mentor and supervisor can collaborate with comments and attached resources and links. Review is a key aspect in agile learning too. In Scrum's workflow, a task is reviewed before dropping it into the done list. This review is usually done by a person different from the one performing it. This IDN design does not include this external revision because it would mean a continuous and too heavy workload for the mentor. Nonetheless, the student can register the mentor's informal comments and reviews in the Diary list.

As it is mandatory in Scrum, reflection on the part of the student teacher must be present in the practicum. In the list "Critical reflection on advancement and cooperation", cards are designed to reflect on general objectives and competencies. Hence, the student must check those items and link to them the tasks accordingly. This step can be done in two ways:

- The student teacher can progressively check advancement whenever a task is done by linking a card with the corresponding objective and/or competence.
- The student teacher can check the accomplished objectives after having finished all tasks and before the joint meeting with school mentor and university instructor.

Regardless of the chosen option, the IDN is informed by the principles of the European Portfolio for Student Teachers of Languages (EPOSTL), an effective instrument for student teachers to move towards reflection and get support for their professional development. As suggested by Newby et al. (2011), (self) assessment and evidence of progress are two paramount contributions of the EPOSTL in the practicum. Following these criteria, and seeking to train student teachers under a critical and constructive perspective, the IDN design should make student teachers "take control over their learning and accept responsibility for it" (Le Cornu & Ewing, 2008, p. 1802). Hence, with this IDN acquisition of a competence can be traced through the flux of the

corresponding tasks. Within the "Critical reflection on advancement and cooperation" list, all three members of each practicum team can comment and reflect on the quality of their cooperation too. All this information is of great value for school mentor and university instructor's assessment and for the student teacher's self-assessment process.

The "Critical reflection on advancement and cooperation" list includes four general objectives that summarize the main goals of practicum established by Crookes (2003) for the TESOL field, and fifteen metacognitive competencies, arranged according to general instrumental, personal and systemic competencies. The content-related dimension seeks to develop the student teacher's content pedagogical competencies, which include his/her teaching ability and his/her mastery of the foreign language. The metacognitive dimension promotes the student teacher's understanding of the broader contexts of education. Procedural and conceptual demands are contemplated too, and sociopolitical teacher beliefs and attitudes are examined as well. Both objectives and competencies function as checklists that any of the three participants can check once the goals are met. Moreover, those objectives and competences can be matched with specific tasks and the participants can make comments including their considerations about how they have been achieved.

Finally, the "Evaluation" list includes evaluation templates to simplify the assessment of the practicum. This approach for testing the acquisition of skills in the TESOL field complements the retrospective meeting method used in Scrum.

4. Discussion

To overcome the shortcomings related to mobility and internationalisation, a unified and standardized organisational scheme for practicum management and implementation in educational training programmes is imperative. If a structured format of practicum integration is widely implemented, management and performance of fieldwork in different settings will become an easier and more coherent practice. This article presents technology enhancement and structure reconfiguration of the practicum within the wider curricula by means of the following strategies:

4.1. Digitalisation

The use of ICT during the practicum was a demand met by this proposal (Zabalza Beraza, 2011). The selected project management tool,

Trello, is free, easy-to-use and collaborative. Based on the Kanban management method, this Trello template allows the active participation of the three agents involved in the practicum, fostering interactive communication among them and facilitating a personalised mentoring. The designed sequence is progressive and intuitive, and keeps track of the whole practicum experience. It maximizes efficiency and ensures that the entire process is agile. These characteristics are suitable for teacher professional development, especially during the practicum stage where the student teachers must plan and organize their teaching practice and classroom interventions.

4.2. Collaboration

The dynamic nature of this IDN allows the different items to be moved from one list to another, as the activities and tasks are performed. All three participants in the process can drag and drop the tasks and create new ones according to the needs. In this manner, all of them are aware of what the others are doing in real time and communication flows naturally. Synchronous updating favours interaction and feedback from the three parties. Team work performance is improved as the agents involved are able to solve issues together. Hence, the relevance given to collaboration between school mentor, university instructor and student teacher is naturally achieved (Borko & Mayfield, 1995; Payant & Murphy, 2012), regardless the geographical location of the fieldwork. In terms of quality and ethical issues, transparency during the process is ensured because all the participants can record their meetings, institutional e-mails and any important decisions taken. As all the information stored in the IDN can be visible to the wider community, all participants are duly aware of the progress of the practicum. In conclusion, the cultural, pedagogical, and ethical challenges detected by Parr and Chan (2015) in international contexts may be successfully overcome through a dialogic monitoring using this IDN.

4.3. Critical thinking and autonomy

Regarding management, this IDN prototype serves to establish goals, monitor progress and assess achievements during the field training of prospective teachers of foreign languages. This IDN features a stable and permanent scheme with a 6-tab structure that includes a diary list, three lists for task follow-up, namely to do tasks, in progress tasks and done tasks, a critical reflection on advancement and cooperation list, and an evaluation list. Accomplishment of two practical goals, namely a Teaching Unit and a Final Report, contributes to efficacy purposes. Hence, iteration, a characteristic of methodologies such as Scrum, highlights this IDN's product-oriented approach, which has been reported to reduce anxiety in teaching practicum (Xu, 2015). Furthermore, as a result of close monitoring, it is expected that student teachers feel more self-aware and freer to implement innovative activities in a regular way, as some studies indicate (Kadushin & Harkness, 2014; Baird, 2015; Smith & Agate, 2004).

Another challenge met with this IDN is assessment, a key issue already highlighted by Celen and Sumru (2017). With visible objectives and competences, both mentors and students can have in mind their goals more easily. When fieldwork is about to finish, each item can be validated if achieved, providing valuable feedback to the prospective teacher. The final evaluation takes the form of formative evaluation, enhancing the student teacher's reflexive process and providing a meaningful practical experience to all the participants.

In order to facilitate assessment, tailored templates are provided for each member of the team. The attached templates help assess the student teacher's knowledge of the foreign language and the didactic competences displayed in the classroom. Student teachers are asked to rate their self-achievement in the classroom and their degree of satisfaction with the practicum organisation. These two aspects comply with the principles of critical thinking, autonomy and professional advancement, as requested by the EPOSTL (Mehlmauer-Larcher, 2009; Newby

et al., 2001). The school mentor's template is oriented towards assessment of the student teacher's achievement of competencies and classroom performance. For university instructors, assessment of practicum and practicum organisation is required.[3]

Regarding other qualitative aspects, it is important to highlight the reflexive nature of this IDN. The student teacher is invited to reflect about his/her field training experience and to put in practice critical thinking skills. Tasks are expected be checked, commented and linked with objectives and competencies. Weekly reflection on progress, stagnation or regression can be expressed in the form of diary entrances and/or through interaction with the other participants in the team. Illuminated by the EPOSTL, student teachers can reflect on their classroom experiences, the planning of their sessions, and the performance and results of the activities once they have been done. This process fosters active teachers and develops long-term reflective capacities, as demanded by literature (Le Cornu & Ewing, 2008). Furthermore, we believe that the reflective nature of this IDN is an added value to the Kanban board because it allows visual traceability of the student teacher's reflective process.

4.4. Potential benefits to other educators

Digital formats for practicum monitoring allow replication and adaptation to the particular situations when needed. By means of digitalisation, communication beyond frontiers is enhanced, and global awareness is more easily achieved (Klein & Wikan, 2019).

To adapt to the particularities of each practicum, this IDN prototype allows major and minor changes in the objectives and competencies contents. Each practicum instructor can adapt the tool to the particular context where the field practice takes place. Hence, adaptability is a relevant characteristic implemented in the design of this IDN. Its intuitive, progressive and dynamic nature ensures its versatility in most circumstances.

In order to facilitate its implementation in different contexts, a three-step lesson plan has been designed to help the instructor present its guidelines in the classroom. As a result, the student teachers can create their customized IDN (Barros-del Río et al., 2020).

When the Virteach survey was launched in October 2019, most participants pointed at sensitive issues that needed to be solved during the practicum stage. Among others, they highlighted the lack of coherence and communication between the different members involved in this phase, which usually led to difficulties for implementing new methodologies and engaging in critical reflection (Barros-del Río & Mediavilla-Martínez, 2019). We believe that this IDN, based on the Kanban management method, offers a suitable template to solve those shortcomings.

5. Conclusions

Practicum is an essential and meaningful form of teacher training, but due to the great diversity of educational programmes at a European level, its nature and quality depends too much on each particular situation. Homogenization and permanent updating, together with critical thinking and autonomy, are the desired features of practicum.

To overcome these challenges, this paper reports a two-step intervention: First, we propose a re-structuring of the practicum within educational programmes. Clarification and unification of the practicum organisation is vital to upgrade the educational fieldwork and to comply with consensus and high quality standards. A progressive structure of

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[3] At this point, we must clarify that due to the 2019–2020 coronavirus pandemic, assessment was not carried out in the proposed format. Unfortunately, this stage was done following institutional directions, and assessment and evaluation had to be adapted to a given format. Hence, validity of the mentioned templates remains to be tested.

practicum allocation, development and assessment enhances the importance of fieldwork in teacher training. We deem important to secure free access to current practicum, practicum pending on assessment, and previous practicum as it will benefit peer learning and strengthen moral values such as honesty and transparency. Second, we present an IDN prototype that addresses the major challenges detected in recent research regarding practicum. This template ensures uniformity in the monitoring of fieldwork at an international level. This IDN, powered by Trello and based on Kanban, ensures free access and transparency, and makes it replicable and easily adaptable to the particularities of each fieldwork. A six-list structure, which includes "Diary", "To do tasks", "In progress tasks", "Done tasks", and "Critical reflection on advancement and cooperation", and "Evaluation", is displayed on the board, making the whole practicum process more accessible visually and practically. The interactive nature of this IDN fosters dialogue, critical feedback, and collaboration among the participants and allows room for innovation in the classroom practice. This collaborative setting is an innovative deployment of technology in foreign language teacher instruction and an optimal solution for close monitoring and teaching awareness enhancement. Furthermore, its versatility ensures its implementation in other fields of education.

As a cautionary note, this IDN was built up and improved during a practicum carried out by a foreign language student teacher. Unfortunately, her fieldwork had to be abruptly stopped due to the Covid-19 contingencies, and she had to adapt her classroom interventions to an online format. Hence, the discussion and results reported here are subject to the limited sample size and somehow incomplete due to the impossibility of full testing. Hence, there is a need for more longitudinal research, and in the near future, we intend to test this IDN for online practicum formats with at least 25 student teachers from five different countries. A larger sample will offer a more complete view of the shortcomings and benefits of this tool. In addition, future research should also explore its utility and use on the part of school mentors and university instructors. Finally, implications for policy and education makers should also be assessed for the sake of a more international and coherent teacher training education policy.

CRediT authorship contribution statement

María Amor Barros-del Río: Conceptualization, Investigation, Supervision, Writing – original draft. **Carlos López Nozal:** Conceptualization, Visualization, Methodology, Supervision, Validation. **Beatriz Mediavilla-Martínez:** Data curation.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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