

# Je-LKS

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Società Italiana di e-Learning

**TEACHER INDUCTION:  
WHAT CAN WE LEARN  
FROM INTERNATIONAL PRACTICES?**

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## THE ISSUE

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by Nicola Villa

This issue of Je-LKS is focused to the theme **Teacher Induction: what can we learn from International Practices?**, edited by Giuseppina Rita Mangione and Maria Chiara Pettenati (INDIRE-National Institute of Documentation, Innovation and Educational Research, Italy).

All the paper of the theme are introduced in the Editorial.

We also publish two additional articles accepted after a peer review procedure; in particular one regular paper and one communication.

**Diana Marcela Cardona-Román, Jenny Marcela Sánchez-Torres and Josep M. Duarte** in the paper titled *Model for Measuring the Implementation of Online Programs in Higher Education* discuss the results of expert judgment assessment of a model to measure the implementation of online programs in higher education.

The communication of **Giusi Antonia Toto** (*From Educational Contexts to Addictions: the Role of Technology in Teaching Methodologies and in Prevention as an Educational Function*) has the objective to examine some positive and negative effects of technology on teenagers' life styles.

The next issue of September will host only multidisciplinary papers.

You can find all the information of the Je-LKS and read all the article freely on the journal's website [www.je-lks.org](http://www.je-lks.org).

**Nicola Villa**  
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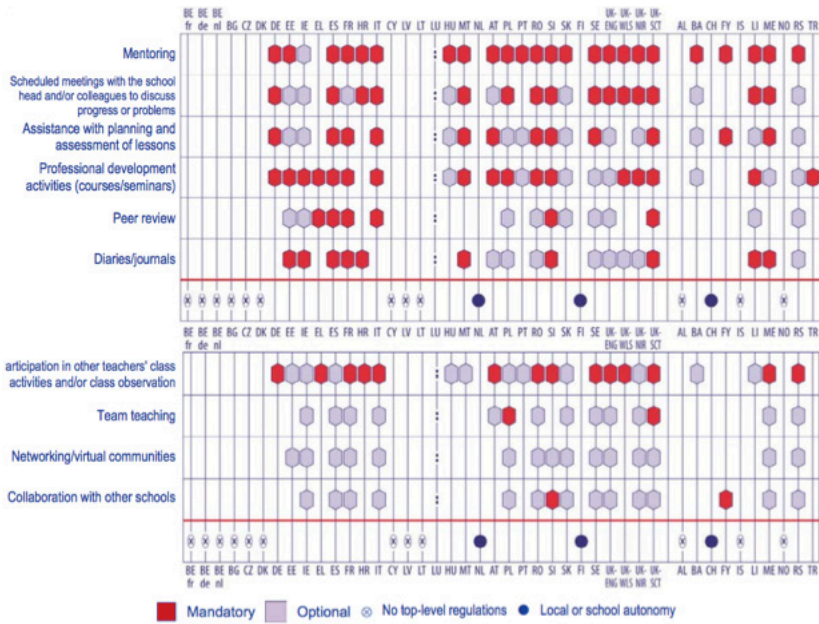
## EDITORIAL

by Giuseppina Rita Mangione  
and Maria Chiara Pettenati

### Focus on:

### Teacher Induction: what can we learn from International Practices?

The preparation to the teaching profession and the early years of teaching (Induction) are sensitive periods in the process of professionalization of the teacher. During Induction period, the school community, in the broader perspective of the term, has the task of providing a wide range of intellectual, social, emotional and material resources to support and guide the transition of new teachers in the midst of their professional practice. National and international research shows that effective models of training for newly recruited teachers should provide tools for action and reflection on professional, organizational, social and career guidance plans. The European Commission handbook for policy-makers on induction into the teaching profession emphasises the importance of three kinds of support for beginning teachers: personal, social and professional (European Commission, 2010). Induction programmes may contain different elements such as mentoring, professional training, peer review and scheduled meetings with the school head through which personal, social and professional support are provided. Among those, mentoring is a compulsory element of induction programmes in almost all European education systems where induction is regulated (Fig. 1).



Source: Eurydice.

Figure 1: Types of support included in the induction programme in primary and secondary general education (ISCED 1-3) according to top-level authority regulations, 2016/17. Source: European Commission/EACEA/Eurydice, 2018 Fig 3.2 pag 52

Although accompaniment and support may be provided in different ways in different countries, recent studies have identified some of the elements considered to be successful in training programmes, both in terms of teacher’s professionalism and in relation to the level of satisfaction of the subjects involved (Mangione et al., 2016).

Recurring elements in the literature include:

- a supportive scholastic context for newly recruited to act in a climate of collective responsibility;
- an opportunity to observe experienced teachers;
- an accurate selection of qualified tutors;
- organization of interaction and confrontation spaces for novice and experienced teachers;
- an intensive and structured supportive curriculum as well as an opportunity for professional development;
- exclusion (or at least extreme limitation) of teacher evaluation structures;
- identification of training and self-assessment tools enabling evaluation



- of teacher's practice;
- elicitation of training goals;
- content diversification;
- economic and political support.

Another aspect, subject of reflection and improvement in training programs for beginning teachers, is the opportunity to integrate face-to-face experiences with reflection and sharing spaces in online environments. In this regard, the use of online facilities is recommended to be a support to face-to-face activities, rather than a substitute, essential to ensure immediacy, which is central to the teachers' professionalism.

While sharing internationally the importance of an integrated training approach (ITE, INDUCTION, CPD) to the development of teaching profession, we witness a wide variety of implementation models of this policy. In this issue, we will focus mainly on all aspects related to design, implementation, governance and evaluation of initial teacher education and induction processes.

This issue presents international standing works that give special attention to some of the teacher training dimensions and processes, both during the initial and ongoing phases.

For what concerns initial training (ITE and *Induction*), the special issue opens up to two works focusing on induction training models and possible governance types.

The first contribution *Governing a state-wide Induction Program: Characteristics and Success Conditions of the Italian Model* (**D. D'Amico, G.R. Mangione & M.C. Pettenati**) focuses on the Italian contest and the change of teacher education over the last years. This work takes as its reference EC Handbook conditions issued in 2010 (Conditions for successful induction Programs) with a critical reading of the induction governance model in Italy. Starting from the governance conditions, recognized as fundamental to an effective induction programme, one of the goals of this work is to understand how the conditions of success have been implemented in the Italian training model and, above all, how they have been characterized with respect to the design of network governance.

The second contribution *Management of Novice Teachers' Induction to The Profession: Modernization of the Russian School Methodological System* (**R. Valeeva, T. Baklashova & L. Latypova**) focuses on *russian induction model*. It is shown the professional followup course for newbie teachers towards school environments, a pathway that requires and that is based on educational institutions collaboration as well as research centres, Ministry and training agencies cooperation. The main purpose is to renew teachers initial training by

the adoption of reflexive technologies, in order to create high quality contents and optimized bases to support the didactical and scientific path, in pursuance of achieving the new professional standards that educational modification nowadays requires.

Further works in this issue related to induction training are concentrated on the specific actions and target skills of the modern teacher.

The role of the teacher must be rethought and new teaching skills have to be developed in order to design innovative learning activities and use of ICT in education. Two papers connect the teaching induction process and the development of a digital culture at school. The first paper *Initial Teacher Training And The National Plan For Digital Education* (**S. Calzone, R. Di Gioia & V. Pappalardo**), seen from a national perspective through the feedback given by 1,324 new teachers, tries to understand the additional value of training actions as proposed via NPDE training courses between 2015 and 2017 funded by the 2014-2020 National Operational Programme for the School (NOP). The paper describes how new teachers approach ICT related issues and the concrete use of the devices in the classroom. The training needs expressed in the two different contexts under observation, namely the Local training Hubs and the new Staff Training provisions show a positive perception of its usefulness in terms of motivation to implement teaching innovation through ICT and the learning of digital skills to be concretely used in the classroom, confirming the importance of training in this field.

In second work *Teachers Induction and Digital Culture. The Case of Southern Italy Teachers attending TFA* (**F.F. Loperfido, A. Dipace, R. Caposeno, A. Scarinci & J. Vitele**) the authors try to understand how Italian teachers participating in the induction process as burgeoning experts in special educational needs perceive the use of ICT in education. In a first step the researchers analyse which factors are associated with the digital culture at school in Italian participants in a TFA course for teachers of students with special educational needs, and in a second moment define how those factors differentiate in relation to some demographics, like both participants' gender and teaching experience.

Approached from a more international perspective the work *Education for Diversity in Initial Teacher Preparation Programmes: a Comparative International Study* (**M.C. Cardona Moltò, R. Tichà & B. Arbery**) focuses on teacher training on inclusive classes management. The essay, supported by a grant from the Spanish Ministry of Education, Culture, and Sport (Secretary of State of Education, Professional Training and Universities) within the

framework of the Programme “State Programme for the Promotion of Talent and its Employability” I+D+i 2013- 2016 (Ref. PRX16/00530), and by the University of Alicante, Office of the Vice-Chancellor for Academic Planning (Ref. 2015/00003670) reports an international case of study investigating what do new teachers perceive about the opportunity of learning and teaching in an inclusive school. The confrontation between the Spanish and American reality shows a substantial international gap existing in terms of the training expectations as the opportunity to learn theoretical aspects of teaching for diversity (e.g., know intervention strategies to meet student diverse educational needs), opportunity to learning to teach inclusively (e.g., for learn how to develop an inclusive curriculum), and opportunity to observe and analyse practical aspects of diversity teaching (e.g., conduct diversity-related field-work), all these differences favouring US respondents. The article highlights the need for increased attention to teaching diversity and specific implications for ongoing development of initial teacher preparation are discussed within the context of improving educators and student teachers’ training for diversity.

In the second part of this special issue there will be a section entirely dedicated to ongoing formation (CPD), which is always strictly connected with the initial one.

The ongoing training requires innovative environments able to support the upgrading of skills as well as competences development. In particular, within a constructivist and connectionist perspective, it’s necessary to ensure the right balance between autonomy and socialization, while stimulating reflection upon experience and generating further meaningful experiences. The contribute *Designing an effective and scientifically grounded e-learning environment for Initial Teacher Education: the Italian University Line Model* (**F. Benedetti**) presents the educational model of the Italian University Line as an example of online didactics meeting the above defined requirements, also in the case of ITE – Initial Teacher Education, and looks at *gamification* as a strategic way to support learners’ motivation and engagement.

In-service teacher training calls also for attention to key competences that must be promoted and developed in teachers. The work *Promoting Digital and Media Competences of pre- and in-Service Teachers. Research Findings of a Project from six European Countries* (**M. Ranieri & I. Bruni**) resumes the teachers digital competence topic, and presents the results of e-MEL, a European project aiming at promoting the development, implementation and testing of training scenarios for pre- and in-service teachers’ training in the field of digital and media literacy education. The essay reinforces the importance of a vertical action on digital competence and the need to detect sustainable models of media and digital skills training, both in terms of teacher education

and teachers' professional development.

In *Heritage Education and Initial Teacher Training: an International Experience* (A. Poce, F. Agrusti & M.R. Re) it is reprised the digital competence issue because of it's evidence as a functional solution for a didactical purpose of museum resources. Through the DICHE project (Digital Innovation in Cultural Heritage Education) we observe an effort to inform primary school teachers of new education practices in cultural heritage fruition which employ technologies and also include the evaluation of their effectiveness in learning in terms of competences development.

Teachers foreign language competences are also to be accounted for in in-service training experiences. Finding innovative ways of in-service training is the main goal of two specific papers of this issue. In the first one *Initial Teacher Education and Learning English at Primary School in Tuscany: Creative Perspectives, Current Challenges, and Possible Approaches* (E. Guerin) we can identify the current challenges and issues related to initial teacher education in the preparation of trainee Primary School teachers to teach English in Primary School. It then examines the role of the English Language Learning-Teaching Methodology Workshops in initial teacher education.

The second paper *Online TESOL Teacher Education: outcome of a Pilot Project* (S. Filice & D. Bardetti) presents the outcome of a teacher-training courses pilot project delivered via some form of technology, that gives the teachers-to-be the opportunity to practice, experiment with technology as students.

This issue means to give not only a time for reflection but also a chance to resume innovative and quality practices, in order to innovate teachers training.

Both from educational templates and target skills point of view, the changing trajectories leave us a way of reading which encourages the reader to have a more critical thinking and identify the possible improvements in professional training actions along several dimensions.

Giuseppina Rita Mangione, Maria Chiara Pettenati  
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Educational Research (Italy)*

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# GOVERNING A STATE-WIDE INDUCTION PROGRAM: CHARACTERISTICS AND SUCCESS CONDITIONS OF THE ITALIAN MODEL

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**Keywords:** Induction, Governance, Conditions, Network, Evidence Based Policy Maker.

Starting from the EC Handbook conditions issued in 2010 (Conditions for successful induction Programs) and from a critical and in-depth reading of the induction governance model in Italy and its quali-quantitative evaluation, this work will attempt to validate or enrich governance principles to be applied to similar implementation contexts. Starting from the governance conditions, recognized as fundamental to an effective induction programme, one of the goals of this work is to understand how the conditions of success have been implemented in the Italian training model and, above all, how they have been characterized with respect to the design of network governance.

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## 1 Introduction

In 2010, the EC has devoted particular attention to Induction by presenting a Handbook for policy maker developing coherent and system-wide induction programmes for beginning teachers (European Commission Staff Working Document SEC, 2010), namely a set of guiding principles for the implementation of effective training models to be adopted in the transition towards profession. However, whether the Induction design aspects stand on already mature studies (Mangione *et al.*, 2016; Eurydice, 2016), the analysis of *governance conditions* has not yet obtained a number of evidences in the field.

This work, starting from the EC Handbook conditions issued in 2010 (Conditions for successful induction Programs) and from a critical and in-depth reading of the induction governance model in Italy and its quali-quantitative evaluation, will attempt to validate or enrich governance principles to be applied to similar implementation contexts.

## 2 Induction in Europe and governance conditions

To achieve the goals of an effective induction programme, five “governance conditions” are recognized in the literature as being fundamental: 1) financial support, 2) clarity of stakeholders’ roles and responsibilities, 3) cooperation among the different elements of the system, 4) a culture that focuses on learning and 5) quality management (EC, 2010).

Induction and other support measures for teachers on trial require investment in terms of adequate time and financial resources. First, a workload revision is recommended not only because preparation of the lesson during the first years of teaching takes much longer time, but also to make it possible for the beginning teachers to participate in all the activities that a newly qualified teachers’ training course proposes. Mentors / Tutors must also be able to rely on sufficient time for them to fulfill their duties; effective mentoring should not be seen as an additional task of the teaching profession. These profiles can be also valued by additional recognitions and incentives.

As far as roles and responsibilities are concerned, which may vary from country to country in cases where schools have a high degree of autonomy over their internal policies, school principals will play also a key role in creating coherent induction programme.

Local authorities can stimulate, support and facilitate school principals involved in developing induction programme, helping them to define appropriate criteria on which to base quality.

In countries where governance is centralized, a coherent induction programme can be established both at a regional and national level. The



ministries in charge of this may use a national agency or universities. In these cases, the involvement of school principals is important to strengthen the size of social support and to ensure that the defined induction programme is adequate for both the school and the reference level.

Induction as part of a professional development path should allow teachers to build continuity between past and future experiences (Kane & Francis, 2013; Rossi *et al.*, 2016). Different systems must form that cross-continuity axis with the in-service training. A common language based on the high quality of teacher figure and school community. Since the induction programme is only one of the phases in the continuing professional development of teachers, it should take into account characteristics of the in-service training system by enhancing and including in continuing training also elements and conditions foreseen in permanent employment.

The school environment within which the teacher makes his/her first entrance should be supportive and consider all their needs. Support for newly employed teachers is a task that not only falls within the tutor duties: other teachers and school principals are also invited to revise and concentrate on their daily activities to make the beginning teacher a change agent and be integrated in the school community. A culture that focuses on the development of professionalism pays attention to cooperation, educational leadership, and the induction vision as a way to make the new recruited teacher a key asset for the school. School principals play a crucial role in creating such a culture.

Quality and effectiveness of induction programme as well as monitoring and evaluation system depend on tutors and school principals' competence. As for the preparation of tutors, especially, its consolidation is necessary and can be done through dedicated training paths. Similarly, the school principals should undergo a dedicated training course so that they can "ensure that the school's policy on supporting new teachers is understood and supported by the staff team".

Finally, regular monitoring of policy and forecasting is essential. A quality criterion for induction is given by the level of commitment shown by all stakeholders aiming to develop an "evidence informed practice" (OECD, 2007).

### **3 The induction model in Italy and networked governance**

The newly qualified teachers path adopted in Italy by the Ministry of Education, University and Research and INDIRE in its recent reformulation dated from the school year 2014/2015 (CM 6768/2015, CM 36167/2015, DM 859/2015, CM 28515/2016), is currently in its fourth year of implementation (2017/2018) and has involved more than 130,000 beginning teachers and about 100,000 welcoming tutors.

The training model is structured in 50 hours and specific activities (Fig. 1).

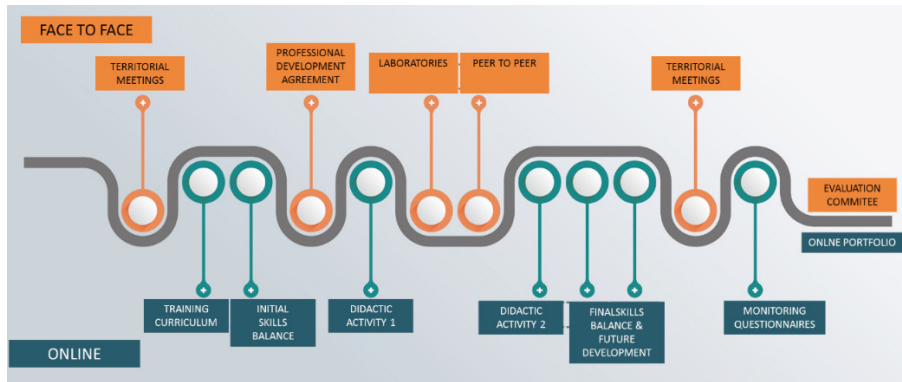


Fig. 1 - Face to face and online activities in the Italian Induction training model

The first three stations (upper line in Fig. 1) translate into a sequence of activities that take place in a face-to-face mode, partially implemented by local reference schools or “Scuole Polo” (initial and final meetings, training laboratories), partly within the school by both school principal and tutor (drafting a professional development agreement), and partly in the teacher’s classroom (mutual observation with tutor, teaching activities to be documented, observation carried out by the school principal). The online environment allows the teachers to carry out a series of activities that integrate with those performed face-to-face, and sometimes guide their action. The activities converge into the online teacher’s formative online portfolio (Fig. 2) (Mangione *et al.*, 2016; Rossi *et al.*, 2016).

The Italian educational context is characterized by a distributed governance approach, a model in which: “the request for collaboration becomes compulsory because of the weak school autonomy and a polycentric administrative system, where school dependence from other subjects is institutionalized through an articulated division of administrative competencies, in which state, regions, local entities and schools participate in different levels of governance and with different functions” (Paletta, 2012).

The recent school reform (Law 105/2015) has, however, leveraged on new policy challenges that required a refocusing on the models and pushed to new governance scenarios characterized by greater collaboration, i.e. to *networked governance models*.

According to recent literature, one speaks of networked governance in education when “the school autonomy is associated to a system of institutional,

national or local rules, which promote systematic collaboration. In this case, the collaboration of schools is a product not only of a spontaneous and autonomous choice, but also as a result of the institutional context that promotes collaborative relationships in various ways” (Paletta, 2012).

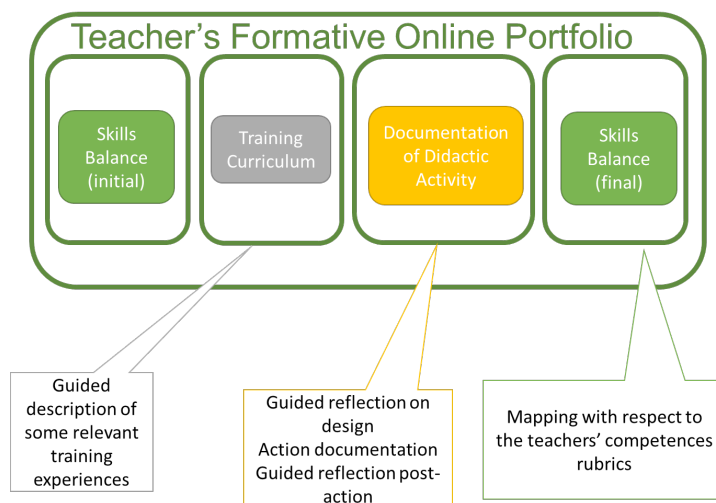


Fig. 2 - Main elements of the teacher's formative online Portfolio

One of the goals of this work is to understand how the governance conditions of success in Induction have been implemented in the Italian training model and, above all, how they have been characterized with respect to the design of network governance.

### ***3.1 Condition 1. financial support***

The Ministry of Education (MIUR) allocated for “transition to the teaching profession” for the year 2015/2016, €47 for each teacher, distributed on a regional basis through local reference schools, reference workshops for laboratory training and face-to-face meetings provided for in the plan. In addition, staff resources (around 130 FTEs across the national territory) were employed and university and school research groups (INDIRE and University) involved for the development and validation of the Teacher Portfolio. Investment in the path, also in its online version, has required the of a virtual teaching environment and the allocation of funds dedicated to quantitative and qualitative monitoring of the training outcomes and of the enabling governance, for a total investment of over € 4.5M for about 86,000

teachers in their probation year.

Compared with the elements cited in (EC, 2010) in relation to the financial support, it is important to point out that - in the face of the annual economic investment decided by the Ministry for the training plan - no measures have been taken to date for the reduction of the beginning teachers' workload, without reducing their salaries. Although no specific workload reduction measures have been implemented, the initiative aimed to recognize the role and function of tutor as a merit criterion for bonus awards (salary bonus provided for in Law 107, paragraph 126) started from the bottom (i.e. from the schools and their autonomy).

As a result of the recent entry into force of this legislation, this aspect is not, or has not yet been systematized in general, but is still applied at the discretion of individual schools autonomy, which receive a fund for the promotion of merit of their teaching staff, distributed at a local level and among the educational institutions in proportion to the organic allocation of teachers, also considering factors of complexity of schools and areas subject to higher educational risk (the average funding for each school site is 24,000 euros, for a national total fund of 200 million euros renewed annually as provided for by Law 107, paragraph 126).

### 3.2 Condition 2. Roles and responsibilities of stakeholders

The governance model of Induction exemplified in fig. 3 seeks to create a virtuous balance between central and peripheral instances of the Administration in order to develop an inherently social system, where the social attribute belongs to multi-community layers including schools, territorial offices (Regional and Provincial), region and state governments (DM 850/2015).

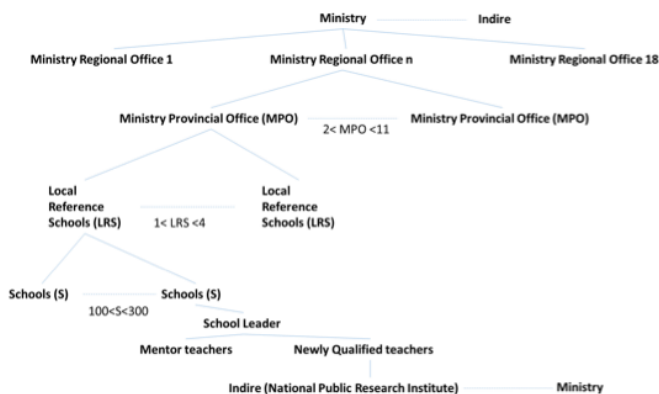


Fig. 3 - Italian Induction model: involved stakeholders and their main relations

The MIUR - Directorate General for School Staff (DGPER) is the subject that defines the general guidelines for the training plan activation, allocates the necessary resources for its implementation and publishes an annual report on its progress. MIUR coordinates the whole national plan, defines quality standards for the path, and collects overall monitoring outcomes. It is the task of INDIRE to create and manage the online platform, enabling the teachers to draft their training portfolio and compile monitoring questionnaires. The Ministry Regional School Offices through the identification of a regional staff coordinate training initiatives at a regional level, i.e. initial and final meetings and the 4 training laboratories, which, together with peer- to-peer observation, represent the “face-to-face” side of the training path.

In particular, they acquire, by public notice, all applications by the local reference Schools for the realization of training paths (a school per each province or more schools per metropolitan area) and collect administrative and didactic reports on the activities carried out, to be issued to DGPER.

These reference Schools collect teachers’ training needs, organize and implement training laboratories on the network. The MIUR territorial offices provide support to the reference schools through specific training initiatives (e.g. tutors), carrying out regional monitoring.

As for what planning and management of face-to-face training activities and laboratory subject matter, the DM 850/2015 indicates that the choice should privilege staff internal to the school; However, the choice is left to the decision of Regional School Offices, Ministry Provincial Offices and Local Reference Schools depending on the institution organizing the training.

The roles of these institutional bodies are complemented by the work of school leaders and tutors of the newly recruited teachers in the actual school of service

In accordance with this plan, the teacher who is completing the probation year is therefore included in a complex system of relationships among the subjects involved in the implementation of training, which thing can make his/her experience complicated, but also enriched, opening it to the entire local and national school community.

### ***3.3 Condition 3. Co-operation between different parts of the system***

Up a few years ago, Italy was characterized by a significant discontinuity between the various professional developmental stages of teachers: Initial Teacher Education (ITE), Induction (Newly qualified teachers’ Training), CPD (Continuous Professional Development). The recent reforms in the teacher training, from DM 850/2015 focusing on the induction training, to Law 107/2015 for School Reform, and the National Teacher Training Plan (DM

797/2016) have had an impact on some of the major aspects of weakness and on criticality factors that undermined the continuity in training by introducing important elements of renewal as regards:

- Promotion of a teacher's identity culture as a professional: from becoming to being and growing as a teaching professional.
- Supportive structures at the various stages of the continuum: initial training; tutoring and mentoring; 'compulsory, permanent and structured' continuous education; promotion of observation and study of teaching practices in their execution; collaborative partnerships; technological environments with a high self-training and peer training value.
- Definition of "national standards" for the teacher's skills/competences: reference frameworks, levels and benchmarks, specific / transversal skills; tools for the skills capitalization and recognition (self-assessment and evaluation; certifications; portfolio; technological supports).
- Strengthening of roles and functions of schools and territory acting in concert with the national authorities as environments for teaching and professionalism practice: shared responsibilities; professional learning communities; integration of professional learning within the profession practice; professional dialogue with stakeholders; individual and collective professional development.
- Structure of teacher's work: prerequisites and structure of initial preparation; induction; working conditions; possible career paths and specializations; evaluation and merit award.

### ***3.4 Condition 4. A culture that is focused on learning***

A culture that is focused on learning by both beginning teachers and experienced teachers includes a focus on collaboration, leadership of learning, promotion of a learning environment conducive to learning as well as looking at beginning teachers as an asset to schools (Carver *et al.*, 2009).

School leaders play a crucial role in creating such a culture (Zeichener & Gore, 1990; Darling-Hammond *et al.*, 1999). Specific prerogatives attributed to the school principal in Italy also concern: the preparation in combination with the beginning teacher of the Training Agreement, in which, on the basis of the initial skills balance sheet, to define all training choices for the probation year; the possibility of programming a higher number of hours than those indicated in the model that the novice teacher will devote to the observation of experienced teachers; the convening of the Evaluation Committee; the drafting of a report for each newly qualified teacher; a documented evaluation of newly qualified teachers' probation year; the issuance of a formal appointment order confirming

a permanent position or the request for an inspection visit.

In line with conceptualizations expressed by (Crosswell & Elliott, 2004; Day *et al.*, 2005) the Italian induction model support” agreement for professional development”, a document that defines the reciprocal commitments that link the newly qualified teacher and community membership and stimulates to assume an “attitude of research and innovation propensity”(Cerini,& Spinosi, 2016). It is important to note that the agreement structure has not received any guidance at a regulatory level, but can find an alternative representation in the various educational communities and refers to the different areas of didactic, organizational and training competence in coherence with indicators and dimensions of the skills balance sheet.

### ***3.5 Condition 5. Focus on quality management***

In accordance with the conditions for ensuring the quality and effectiveness of induction programmes, the Italian model adopts various quality management elements in agreement and in connection with the multi-level aspects that characterize governance:

#### **The competence of tutors/mentors**

Since one of the pillars of the induction-training model is the peer-to-peer dimension, that is, novice teacher’s working together with a tutor, it is of utmost importance to ensure the qualities and competence of all the tutors.

During the three years of experimentation, greater attention has been paid to the selection of tutors according to rigorous criteria (such as knowledge about the learning of beginning teachers and inter-personal relationship skills). Special tutor training actions have also been put in place - now experimentally and on a regional basis and initiative - to provide the necessary scaffolding to perform that function (Magnoler, 2017)

#### **The competence of school leaders**

With the awareness that the competences and commitment of school leaders are important for creating a coherent induction system supportive measures have been implemented, namely:

- Organization of national training days addressed to school leaders of the local reference Schools;
- Reference models and tools for the implementation of training agreement and classroom observation.

Within this framework, however, there is also the increased need for the School Leaders to be accompanied by appropriate training to promote the

professional development of teachers, to bet on the human factor as a key resource for school improvement (Cerini, 2016).

### **Process Documentation**

The training model is actually centred on the creation of documents by the teacher in order to support that critical reflexivity that enhances a professional development. Quality elements are therefore rooted in the construction of guided paths, making use of video for reflection on action and developing skills of professional vision, and fostering the work of tutors in mentoring and peer-to-peer processes (Mangione & Rosa, 2017; Mangione *et al.*, 2017).

Other elements of quality management relate to the various levels of the national monitoring conducted by Indire, which annually finds its specialization aimed at deepening some elements, and to inform about the decisions for the reopening of the subsequent year (through monitoring questionnaires compiled by newly qualified teachers and their tutors, and addressed to the school leaders; interviews; focus groups and round tables with representative of teachers, tutors and referents of the Regional School Offices; automatic and semi-automatic analysis of selected parts from the digital portfolio content)(Mangione *et al.*, 2016; Mangione & Pettenati, 2017, Mangione, Della Gala e Pettenati, 2017).

From the online platform viewpoint, data collection and the processing of interaction data with the environment are implemented, such as access statistics, assistance ticket reports managed by the help desk system, updating of a dashboard (from 2016/2017) also aimed at building a culture of collaboration and at focusing on specific issues through the realization of thematic “Special Issues” providing timely update on the training plan during its development,

## **4 Research question and methodology**

Let's also assume that the Italian model of induction can help to decline and to point out the five governance conditions identified at a European level (Handbook) (1. financial support; 2. role and responsibilities of stakeholders; 3. cooperation between different parts of the system; 4. culture focused on learning; 5. quality management), so that the model can be repeated effectively in complex, heterogeneous contexts and with the involvement of a large number of teachers and actors in the training system.

To check these hypotheses and get useful recommendations to implement all corrections to the networked governance model launched in 2014 and developed in the following three-year period, and currently at the start of his fourth deployment for the 2017/2018 year, a scientific study has been conducted, based on tools for both quantitative and qualitative analysis. Specifically, 1) the quantitative analysis relies on data collected through a questionnaire created by



INDIRE and addressed to a sample of School Leaders from NQT (newly qualified teacher) schools for year 2015-2016. In this respect, the results of the survey involving 114 school leaders from all over Italy were analyzed. The sample of school leaders involved was as follows: 68.8% from upper secondary schools, 28.3% from unified school districts and less than 3% from education departments, lower secondary schools and Provincial Adult Education Centres (CPIA); 2) A survey promoted by the DGPER of the Ministry of Education and Research, addressed to Regional School Offices across the national territory in order to have a feedback on the training of newly qualified teachers, in terms of strengths and weaknesses, in the academic year 2015-2016.

Moreover, 3) use of some of the tools for qualitative analysis (focus groups and interviews) and the experiences of a sample of “privileged witnesses”, being main nodes of the network of actors involved in the implementation of the training action

The survey involved 2 types of interlocutors and different data collection methods (Fig.4):

- During the three days of presentation of the new training year in Milan, Rome and Naples in November 2016, it was possible to organize three round tables with representatives from the Regional School Offices to form the same number of *focus groups*, mediated by a conductor. In these meetings, participants were asked to retrace their experience and identify positive elements and criticalities detected in the *governance* model.
- On the same occasions, other *mini-focus groups* were carried out with the School Principals from the Reference Schools and the Local Offices, to gather their perception on the model set up for Induction in Italy.

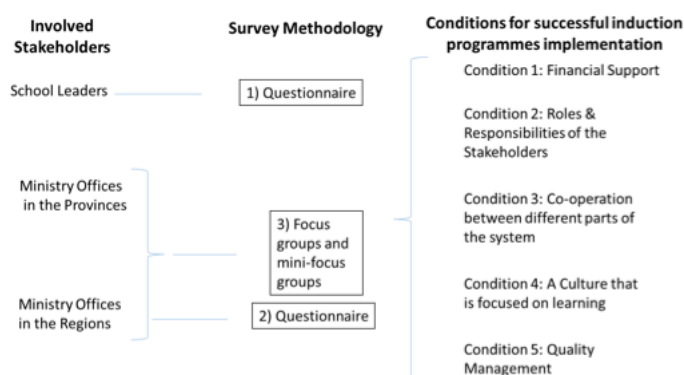


Fig.4 - Research methodology

An accurate analysis for the two types of privileged actors was supposed to allow for the identification of constituent and key elements of the training model, as well as improvements to be made to overcome the detected criticalities. Since this methodology implies to take into account the influence of factors that are internal or external to the group (Bovine, 1998), discussion groups were repeated throughout the country with different people until the obtained information resulted redundant (normally three or four groups for each subset of surveyed population are sufficient). It can be defined as a conversation caused by the interviewer, addressed to subjects chosen on the basis of a survey plan and in a substantial number, for a cognitive purpose.

Data analysis is centred on the subjects and its results are presented in a narrative perspective. Summaries and generalizations have taken the form of classifications and types, and have been used to return to the Ministry prospects for future improvement resulting from an evidence based research approach (Eurydice, 2017) In fact, as shown in (OECD,2007) ‘effective long-term policies must be based on solid evidence. For Member States to fully understand and monitor what is happening in their systems, they need channels for producing and accessing relevant research, a statistical infrastructure capable of collecting the necessary data, and mechanisms to assess progress as policies are implemented’ (p.2). Data and evidence resulting from this investigation will be included to justify the legislation process about Induction in Italy.

## 5 Reading governance characteristics from the quantitative survey

School leaders were asked questions about the choice of tutors and supportive elements for workload management, observation and accompaniment for beginning teachers and possible improvements to be introduced.

(Condition 5) Tutor selection was not systematically accompanied by a training and workload management path. To the question: “Were the tutors designated to assist the teachers in your school generally: [trained through appropriate training paths]? 34% of school leaders answered “Sometimes”, 27.4% “Never”, 16% “Always” while 22.6% did not answer.

(Condition 5) To the question: “Were the tutors designated to assist the teachers in your school generally: [supported by appropriate tools, including at least one orientation meeting]? 74.5% of school leaders answered “Always”, 14.2% “Sometimes”, 0.9% “Never” and 10.4% did not answer.

(Condition 4) School leaders confirm that they conducted observation visits in their newly qualified teachers’ classrooms but in different modes: 62.3% of SLs conducted their observations using appropriate analytical tools, 57.5% declare they completed a visit per each new teacher, 44.3% continued their visits with in-depth and discussion meetings, 35.8% participated in several

classroom visits per each beginning teacher.

(Condition 3) (Condition 4) (Condition 2) In the definition and stipulation of the “training agreement”, 80.2% of SLs linked this action with the initial budget provided for the skills balance sheet, 75.5% based on a reference model by customizing it to the individual teacher’s needs, 46.2% preceded all the other stages of face-to-face training, while 27.4% conducted this action in connection with the Training Curriculum.

The school leader has therefore strengthened the commitment required by the agreement not only by valorizing individual teachers’ past experiences (through references to their online training curriculum) but, above all, by virtuously taking into account the result of their initial skills balance sheet, and making it a guidance tool for an agreement that the teacher underwrites with the whole educational community.

(Condition 5) In the light of the continuous monitoring carried out during the probation year, school leaders were asked to point out some strengths and weaknesses of the training model, thereby addressing its improvement. Around 83% considers the territorial laboratories to be a strength point, though not enough to allow teachers to bring about a significant approximation to the laboratory methodology, while 75.5% considers as strengths “the professional monitoring of the newly qualified teachers, as aiming at the formulation of the training agreement and the mutual observation in the classroom”. Finally, 51.9% refers to the “online training aimed at building the Portfolio, including the two Skills Balance Sheets (initial and final), the Training Curriculum, and the design, documentation and reflection on two teaching activities”.

(Condition 4) (Condition 5) School Leaders were also asked if there were improvements introduced in comparison with the past training edition and therefore with respect to the cultural model to promote. Specifically, 52.8% indicated an improvement over a “Better co-ordination of the activities of welcoming tutors and / or greater attention to their training”, 40.6% a “Greater link between peer-to-peer activities and the drafting of both Training Agreement and Skills Balance Sheet. 34 percent indicated improvements in “Arrangement of shared tools for peer-to-peer observation and / or tools such as diaries, documentation templates, etc.”; 1% in “An increased involvement of the school community in a coordinated and synergistic reception of newly qualified teachers”, and 26.4% in “An enhancement of teaching activities, planned and documented during training through the construction of a freely accessible storage space”.

(Condition 5) Finally, they were asked to give a priority order for the points on which to intervene in order to further improve the training experience of the newly qualified teachers. Their answers indicated as their first choice, for 21.7% “Organizing opportunities and spaces for interaction and confrontation between

novice teachers and experienced teachers”; 15.1% “More opportunities to observe experienced teachers” and “Diversifying and customizing the content of training”, while 11.3% “Providing formative and self-assessment tools that facilitate evaluation of practice”.

The SLs are in favor of a training covering the entire school year and then starting in September with the beginning of the school activities. Secondly, they report a need to review the structure of laboratory, and a need for a higher degree of school autonomy in the management of experienced teachers selected by the Provincial Offices.

A number of 18 Regional Offices in the Italian Regions were also interviewed through a questionnaire given by the Directorate General of school staff (MIUR) at the end of the training year 2015/2016.

The monitoring was to investigate the satisfaction and the opinion expressed by these offices on the many aspects of the training plan, which we only comment on those items that are closely related to the governance conditions that are the subject of this work. The questionnaire (essay questions), investigated various issues by asking for strengths and weaknesses.

The strengths that the Regional School Offices highlighted in terms of management (Condition 2) have been identified by all 18 regions in the overall governance levels of the network formed by MIUR, Regional and Provincial offices and Reference School, with the support of INDIRE. The main weakness expressed on this front was about the ability to ensure a structured relationship with newly qualified teachers' school precisely for issues related to management.

Two regional offices also pointed out the importance of a better governance in a regional online environment, having developed it, which complemented the national one in support of the teacher training. For two regions where instead this environment was not developed, its presence was also underlined as a potential contribution to improvement (Condition 5).

Adequacy, sorted by number and localization (see figure 5), with respect to the need for a distribution layout of the local training poles network in the territory, had controversial evaluations, since judged appropriate by some regions and inappropriate by others. This variability can be ascribed to a large regional variety, in terms of both extension and of practicability of the territory (for example, there are regions - while not very wide - that due to their geographical conformation and / or characteristics of their public transport system, present more difficulties of moving within their areas than larger but better interconnected regions).



Fig. 5 - Distribution of Regional, Provincial Offices and Local Reference School

Critical elements were instead highlighted with respect to the experts training activity in training laboratories, and the difficulties in selecting trainers with appropriate skills (Condition 5).

To confirm the positive feedback obtained by the Regional School Offices, it is interesting to point out that possible improvements resulting from the proposals made through the quality monitoring, have mainly had a positive impact on the instructional model (tutor training, expert selection, etc.) and had not been only limited to aspects of governance. Where such requests concerned this kind of aspects, they were linked to issues such as required standardized forms (Condition 5) need to adapt a suitable number of local training poles to the number of trainees (Condition 2), opportunity to work in favour of streamlining bureaucratic procedures (Condition 5), need to proceed with timely allocation (Condition 1, Condition 5) and to bring about a simplification in operations of financial reporting (Condition 5) (Condition 2).

## 6 Reading governance characteristics from the qualitative survey

To complement the above-mentioned quantitative results, the qualitative analysis was aimed at analyzing the effectiveness of governance with respect to the collaboration among different roles of the system, training culture and quality of the actions implemented in order to target improvement efforts and to return items that could revise policies and ministerial circulars.

### 6.1 Focus groups with representatives of the Ministry regional offices

The regional round tables, in the North, Central and South Italy, organized in conjunction with start-up meetings of the training year 2016/2017, hosted representatives of the Regional School Offices of 16 regions over the national

territory. The round table had two priority cognitive objectives, formulated as constituent questions of the interview:

*Q1. In consideration of the experience gained in the school year 2015/2016, what were the strengths of the model and what original elements that you put into it, let you assume they are worth being transferred and contaminated with all other regions (colleagues from Local training Poles and provincial offices)?*

*Q2. What suggestions would you make to MIUR and Indire to improve the path?*

These introductory questions allowed the participants to reflect on the discussion topic. The results, expressed anonymously, were presented in accordance with directions given by Morgan (1988), following a qualitative or ethnographic approach, with a report ordered by themes, and supported by verbalizations made by the group (Ricolfi, 2001).

## ***6.2 Strengths and original replicable elements***

Focus group narrative reading, conducted with the help of Regional School Officers of a good number of Italian regions, facilitates the identification of value-added elements that can be systematized. Therefore, its synthesis and possible generalizations assume the form of classifications and types of intervention considered optimal:

- build a strong alliance between Central Administration, Regional Administration and Schools, which serve as a function of support and management of incoming and in-service training activities (link between Local Training Poles for newly qualified teachers and territorial schools), giving the former ones greater autonomy within the local training action; (Condition 2 and Condition 5)
- implement a positive (of relationship and networking) cascade training circuit: local events shared via streaming allowing service managers of the various school sites to plan opportunities for content reuse to reinforce awareness of key concepts and for sustaining teachers and tutors training (Condition 4, Condition 5);
- design a laboratory training model that enables working with small groups (bonsai lab model) instead of teacher-led discussions (Condition 5);
- prepare a laboratory planning, stemming from needs analyses (Condition 2, Condition 4) collected from data that teachers previously entered into special online forms and with an eye to the priorities of the in-service

- Teachers National Development Plan<sup>1</sup>;
- identify a standard template for experienced teachers selection announcements, ensuring a minimum level of quality common to all teachers participating in training (Condition 5);
  - rethink the school administration role, which must provide guidance, be present, ensure uniformity, quality and upward standardization (Condition 2);
  - build a framework that is not only regulatory, but also pedagogical - didactic around the new model: through *vademecum*, alphabets / glossaries, scientific references and through a “narrative” accompaniment, made by using service notes for the various targets (Condition 5, Condition 4);
  - provide a space for sharing and updating work materials (Condition 5);
  - flexibly chose the appropriate training mode - but intended for personalization of the path – non-localized, but capable of organizing specific targeting in which to foresee trainer rotation over the national territory, according to groups that are formed in the various school sites (Condition 2).

### ***6.3 Criticalities and improvements***

The Regional School Officers were asked to express, during the local focus groups held in Milan, Rome and Naples, all criticalities that emerged during the training experience in order to suggest improvement paths:

- recognizing the role of local training poles that should also be representatives for the Area networks provided by the in-service Teachers National Development Plan (Condition 3 e Condition 2);
- leveraging on actions of collegiality, participation and communication (Condition 4);
- fostering continuity and synergy with in-service Teachers National Development Plan actions (Condition 3);
- supporting the teacher in understanding the shift from teaching responsibility to a teaching action that must also be responsible for learning and functioning of the system (Condition 4);
- focusing on the figure of “teacher-researcher” who assumes a responsibility over the community they belong to (Condition 2);
- aligning the direction of all regional *staff* for the training and probation year and try to meet the need to work on the basis of documents and modeling, which schools can draw on to improve their access to good project proposals and effective working tools (Condition 5);

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<sup>1</sup> [http://www.istruzione.it/piano\\_docenti/](http://www.istruzione.it/piano_docenti/)

- taking into account the lack of uniformity in the tutor training. In order to appreciate the weight and substance of this figure, it would be necessary to design propaedeutic moments of investment and preparation for cultural innovation promoted by the path (Condition 5);
- providing dedicated labs to the different levels of school to accommodate a new competence-based didactics (Condition 5);
- taking care of the formation of in-service school sites of both the school leaders and secretary offices for the creation of a model that is functional to the professional development of the entire school community (Condition 5).

#### ***6.4 Mini-focus groups with representatives of the Ministry provincial offices and with Local Training Poles School Leaders or their representatives***

The mini focus group tool was chosen to engage a particularly difficult target to be obtained, but above all because the survey, in continuity with the focus groups proposed to the regional representatives, was meant to deepen similar topics.

The risk of having a narrow range of ideas and opinions (ascribed to this work methodology) was overcome by replicating events on three provincial contexts in the North, Central and South Italy, whose returns have been merged by key questions.

Once obtained the peripheral Administration's opinion, asked to develop a series of activities related to the coordination, training, supervision, and communication with the Ministry, it seemed important to better understand the interaction with the local training poles for the management of training. The questions addressed to the representatives of Ministry Provincial Offices and the Local Training Poles school leaders were the following: institutional relations management (Q1), Organization management (Q2) and finally promotion of cultural content (Q3).

The dimensions of the in-depth study were addressed through the construction of constituent questions (opening or introductory) of the interview, and each question was in turn divided into Transition Questions (TQs) and Key Questions (KQs).

*Q1) What type of relationship has arisen among school administration, USR (regional school office) and USP (provincial school office)?*

1. Which between regional office and provincial office, was the center of gravity of the relationship? (TQ)
2. How have these relationships been maintained? Through conferences, meetings, or guidelines, circulars, documents? (KQ)



3. Did you feel accompanied or assisted during this experience as regards logistical and organizational aspects, such as registrations, timing of administrative procedures? (TQ)
4. Were you able to make a contribution in qualitative terms, helping to secure an organization on the local territory? (KQ):

*Q2) How were organization, logistics and management of training activities structured?*

1. How does arrangement of training activities take place? (TQ)
2. Do you rely on other school/training hubs and therefore create a further dimension of support to schools? (KQ)
3. How well have you been able to maintain the quality standard of the laboratory activity? (KQ)
4. Has there been a School Leader's renewed interest in the training themes? (KQ)
5. How well did you handle the relationship with tutor-trainers, that is, with the help of experts for conducting laboratory activities? (KQ)

*Q3) How was it possible to ensure a minimum retention on cultural content?*

1. Was a unique environment for sharing updating and retrieving of materials available?
2. Did you use a platform that all the teachers and tutors working in the labs could access? (KQ)
3. How did you act to convey the attendees' attention also to resources provided by Indire? (KQ)
4. How can quality elements of cultural content be ensured? (KQ)

The introductory questions allowed the participants to reflect on the discussion topic, while their articulation into key questions allows them to go deeper into specific themes, thus requiring an even more active participation by the single conductor and allowing for a substantial narrative return, full of suggestions for improvement.

Mini focus groups narrative reading, conducted with the provincial office school representatives, provides some indications for improvement concerning the dimensions being analysed. In particular, model sustainability should be based on:

- a different articulation of face-to-face encounters (less teacher-led type and more motivating / in support of the path); (Condition 4)
- a balancing of roles between Regional and Provincial Offices and Local Training Poles; (Condition 2)
- a better management of territorial/provincial laboratories in order

- to respond to an active teaching and homogeneous working groups (Condition 5)
- a laboratory training offer able to meet the training needs actually detected; (Condition 5)
  - a tutors and teachers' specific motivation and training action helping them in the observation and documentation (multimedia) of teaching practices and reflection on these latter; (Condition 5, Condition 4)
  - an active role of Indire in the preparation of kits, tutorials, guides and materials to support a process of systematization of good work practices (Condition 5).

## Conclusions

The Italian approach deals with an intervention of remarkable organizational complexity and cultural innovation that aims to harmonize rules, processes and technologies within a unique 'training system' (D'Amico, 2017), relying on the four-year experimentation of a new training model introduced in 2014/2015 for the induction phase, and involving over 140,000 newly qualified teachers, about 100,000 teaching staff who have played the role of tutor / mentor, over 6000 school leaders, more than 6500 experienced trainers in addition to staff from Ministry regional and provincial offices in the area, about 130 researchers and technical assistants from INDIRE - the national public research institute that assists the Ministry in the realization of the plan arrangement.

A selected reading of some of the results of the 2015/2016 training plan, has highlighted some of the aspects characterizing the governance conditions for successful induction programmes in the Italian model, in terms of both model strengths and of system improvement.

Regarding Condition 1 (Financial Support), the Ministry dedicates to the Italian national induction plan an annual budget allocated in proportion to the number of teachers each year included in the training and probation path. Some of the funding goes to the Reference School and are accounted by them back to the Ministry. Another part of the funding is dedicated to the centralized online environment run by INDIRE. The items highlighted in relation to this condition by stakeholders of the system governance, are primarily referred to the need to provide for funding on a yearly basis and the importance of developing more agile financial reporting methods.

Regarding Condition 2 (Roles and Responsibility of Stakeholders) the importance and the development of mechanisms for a wider communication towards the terminal nodes of the training plan, namely beginning teachers school sites, taking particular attention and care of School Leaders of such schools and their administrative secretary offices, which must be properly

trained to fulfill, even more consciously and effectively, the needs of peripheral management-administrative structure in support of the plan (e.g. collecting and analyzing training needs, managing the relationship between novice teacher and tutor, organization of evaluation committees, etc.).

Concerning Condition 3 (Co-operation among different parts of the system) it should be noted that the awareness of roles and functions of each stakeholder and the need to further clarify becomes pressing, also due to the recent introduction of the National in-service Teachers Training Plan for in-service teachers to whom the induction actors are called to connect. In this regard, the importance of the educational leadership of the School Leader emerges clearly, since he/she holds a training agreement with the teacher who being employed in his/her school, has an inherent potential to go beyond the probation year. On the other hand, the local training poles that have worked in the induction context, are naturally eligible to be territorial training centres, and also authoritative for the teachers training plan, as bearers of such experience to share in terms of good practices, and as a trigger for a good training continuum between induction and CPD.

Concerning Condition 4 (A culture that is focused on learning), we can state that this three-year period has leveraged autonomy, encouraging collaboration and alliance aiming to foster awareness of all stakeholders with respect to their role, and to contribute to the effectiveness of the general plan.

This has happened for individual teachers who have been experimenting with a new form of professional collaboration in the teacher-novice role with the teacher-tutor in peer-to-peer activity; for school leaders of the new teachers school sites, who were required to interact with the teacher to be expressed through classroom observations and by underwriting a professional agreement; for the representatives of the local training poles, who in concert with the Ministerial Offices in the area - were in charge of collecting training needs, selecting experts and organizing training laboratories; for local offices, as for their key role of scaffolding for the penetration of the cultural approach to support schools.

In continuity with Condition 4, which in the Italian model has also been characterized by the awareness about direct benefits of teacher training related to some founding pillars of the training plan (training laboratories conducted by experts, peer-to-peer, use of online portfolio), Condition 5 (Quality Management) is characterized by processes that guarantee the system to withstand. Tutors' selection and training - which is still lacking in Italian models - was certainly the most addressed issue by all the stakeholders in the training, as well as experts' selection and training for training laboratories over the national territory. Online management aspects at a regional level and the identification and sharing of good local practice at a national level to become

standard and reference models (e.g. format of Training Laboratories, experts selection announcement, classroom observation tools etc.) have also been mentioned as factors on which to work for the improvement of the plan.

It is important to note that, although not detectable by monitoring outcomes we have discussed in this work - and being today at the end of the third year of experimentation, the systematic processes put in place to ensure conditions of shared culture (Condition 4) and quality (Condition 5) are supported by the fact that the primary relationships are supplemented by networked relationships among the stakeholders.

The Italian induction model, in the perspective of an evidence-based policy maker, has certainly laid the cultural and operational foundation for enabling the transition to the National Training Plan for teachers, which let them overcome an often fragmented training, and open up to a system centred on professional development, allows to convey incoming and in-service training into a single process that follows all teacher's training needs throughout their career.

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# MANAGEMENT OF NOVICE TEACHERS' INDUCTION TO THE PROFESSION: MODERNIZATION OF THE RUSSIAN SCHOOL METHODOLOGICAL SYSTEM

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**Keywords:** Initial teacher education, Novice teachers, Novice teachers' adaptation, Induction, Induction policies and programs, Russia

The current context of general education in Russia is distinguished by the availability of programs ensuring the development of human resources potential in educational institutions. Particular attention is paid by the government of the Russian Federation and by local authorities to projects related to the effective adaptation of novice teachers in the professional pedagogical environment. This process involves collaborative work of management and staff of general education institutions, higher education institutions, ministries and agencies. The leading mechanisms of professional development are modernization of the initial teacher education (ITE) and reflexive management technologies in the educational institutions. Creating qualitatively new content and conditions of scientific and methodological support to a novice teacher in the elaboration of new professional standards requires the development of networking and productive innovations in the education system. This paper reveals the development of innovative

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organizational models of advanced training for administrative and pedagogical personnel at the regional and municipal levels in Russia.

## 1 Introduction: Russian approach and aims of induction policies and programs

Support of novice teachers' induction has become a pressing issue, both in Russia and across the globe, and its purpose and goals need to be reconsidered in accordance with current and future contexts. Questions arising from this include the development of teachers' professional identities in the early years of teaching; intersection and connection between the contextual, cultural and biographical factors affecting their learning to become an effective teacher; how the system of initial teacher education should be reformed in order the early years in the profession were a less negative and less traumatic experience. Some answers to these questions can be found in the research of novice teachers from around the world which have informed the thinking and approach adopted in Russia in recent years (Achinstein *et al.*, 2010; Bickmore & Bickmore, 2010; Britton *et al.*, 2003; Fantilli & McDougall, 2009; Flores, 2006; Wong, 2005).

The problem of a novice teacher induction to the profession and the professional formation of future teachers is relevant due to the social significance of the professionalism factor in the Russian education modernization.

The implementation of projects related to the induction of young teachers to the professional environment is carried out in accordance with the national priorities of formal and non-formal teacher education legally enshrined in the Law of the Russian Federation of 29.12.2012 № 273-Federal Law "On education in the Russian Federation"<sup>1</sup>, the Labor Code of the Russian Federation<sup>2</sup>. Moreover, it is legislated in the Unified skills guide for positions of managers, specialists and non-manual workers, approved by the Ministry of health and social development of the Russian Federation of 26.08.2010 No. 761p.<sup>3</sup>

The design of these programs is carried out according to the Teachers' professional standard (2013)<sup>4</sup>, which states that the teacher of the 21st century is a harmoniously developed person aspiring to spiritual, professional, general cultural and physical perfection, able to select the most effective means and technologies of training, able to organize reflexive activity possessing high degree of professional competence. To meet these requirements, it is

<sup>1</sup> <https://xn--80abucjiihv9a.xn-p1ai/%D0%B4%D0%BE%D0%BA%D1%83%D0%BC%D0%B5%D0%BD%D1%82%D1%8B/2974>

<sup>2</sup> [http://kodeks.systems.ru/tk\\_rf/](http://kodeks.systems.ru/tk_rf/)

<sup>3</sup> <http://legalacts.ru/doc/prikaz-minzdravsotsrazvitija-rf-ot-26082010-n-761n/>

<sup>4</sup> [http://www.edustandart.ru/wp-content/uploads/2017/04/rofessionalnyj\\_standart\\_pedagoga\\_2013.pdf](http://www.edustandart.ru/wp-content/uploads/2017/04/rofessionalnyj_standart_pedagoga_2013.pdf)



necessary to modernize the school methodological system, which manages the professional competence quality of novice teachers at the executive and tactical levels (Nikiforova, 2012).

## **2 Theoretical background: Russian researches on difficulties in teaching activities of novice teachers**

The process of novice teachers' adaptation involves overcoming many didactic, methodological, organizational, educational and other challenges that accompany their teaching practice. The overwhelming majority are not ready for fruitful work due to lack of work experience, communication, knowledge of the profile of the educational institution, the school collective, the parental community, and other reasons of adaptational and professional nature.

The first comprehensive Russian study of novice teachers' work challenges was done by N.V. Kuzmina (1967). The scholar revealed the essence, classification, structure of these challenges on the basis of some characteristics, content and dynamics, established professional aspects that cause re-adaptation and maladaptation.

T.S. Polyakova (1983) investigated the main challenges in the pedagogical activity of novice teachers, made an attempt to identify the main psychological and educational obstacle that mostly influences the quality of teaching and educational processes.

According to the studies of A.G. Moroz (1983), the process of interdisciplinary connections formation by novice teachers is accompanied by overcoming psychological and educational challenges.

The analysis of the primary sources demonstrates that adaptation and maladaptation processes in novice teachers have become even more complex because of the worsening social and economic situation in the country and the aggravation of a whole range of problems. L.V. Konovalova (2011) highlights a number of challenges novice teachers face in the period of their professional adaptation in a multinational region.

O.V. Nazarova (2003) studied the dynamics of the adaptational processes of novice gymnasium teachers in the context of general secondary education modernization. In her study, she proved that the adaptational processes of trainee teachers are optimized thanks to passing dominant intelligence test during their vocational selection; design and implementation of a special set of measures to overcome maladaptation and optimize the functional states of novice teachers.

### 3 Challenges of the ITE in Russia

Teacher education takes a special place and has a fundamental role in the modernization process of the whole education system in Russia. Currently 279 higher education institutions train teachers (with 438 thousand students in total). The system of teacher education in Russia is orientated towards one of the biggest markets: it trains teachers for more than 140,000 educational institutions with a variety of specializations which serve 37.27 million students annually. The total number of students in pedagogical institutions is more than 500,000 people. Within these institutions the educational process is organized by 80,000 educators (instructors, lecturers, teachers, etc.)

In accordance with the article 10 of the Federal Law “On Education in the Russian Federation” (2012) the current system of professional education in Russia consists of the following levels:

1. secondary professional (vocational) education;
2. higher professional education (bachelor’s degrees);
3. higher professional education (specialist and master’s degrees);
4. higher professional education (highest qualifications).

At the same time, despite a rather large number of graduates of teacher training institutions, the pedagogical composition of schools in Russia shows a growing trend toward aging of personnel. O.V. Polyakova, L.A. Latypova and D.D. Sungatullina (2017) write about the age-related imbalance of teachers and the gap between the expectations of young teachers and the objective reality they face in school. The urgent problem of the increasing number of teachers leaving the profession (1,031,700 teachers in 2013/2014), and the age-related imbalance of school teachers is becoming obvious (according to statistics, in 2013/2014 teachers aged 35+ amounted to 801,600, whereas teachers under 35 totaled only 230,100 (Labor and employment, 2015, p. 143).

The problems faced by young teachers, their professional deficiencies and requests are evidenced by the results of an international study TALIS (Teaching and Learning International Survey) (Russian teachers, 2015). Novice teachers have difficulties with professional communication and face obstacles in accessing professional development. Meanwhile, they are not ready to solve practical teaching problems and have insufficient knowledge of modern teaching techniques (Pinskaya *et al.*, 2016). The results of the TALIS-2013 study also suggest that the roots of the problems faced by young Russian teachers lie in their inadequate training.

In 2014 the project of teacher education modernization was initiated by the Ministry of Education and Science of the Russian Federation. The main objective of this project was to provide teacher training in accordance with the

professional standard of the teacher and the federal state educational standards of general education (Bolotov *et al.*, 2015). In recent years, both at the federal and regional levels, serious efforts have been made to support young educators, increase their income, organize mentoring and promote the development of their professional competencies (Valeeva & Gafurov, 2017).

## 4 Design and evaluation of induction programmes

The implementation of programs on novice teachers' support in Russian educational institutions is carried out within five areas, contributing to the development of teachers' ability to participate in the innovation activities of general education:

- Increasing the motivation of novice teachers;
- Building up the methodological potential of young teachers;
- Advanced training of novice teachers;
- Individual support of novice teachers;
- Corporate culture development and social partnership development.

Network partners in the induction of young teachers to the professional pedagogical environment that are relevant to each area of the program (management and staff of general education institutions, higher education institutions, the Ministry of education and science) are developing projects to ensure its successful implementation and achievement of the objectives (Kharavinina, 2011). The projects are interconnected and coordinated by partners to gain benefits and manage successfully.

### 4.1 *Increasing the motivation of novice teachers*

Within the first area of novice teachers support programs implementation in educational institutions, the projects "Modern classroom", "Business and psychological security" are implemented, contributing to the young teachers' motivation improvement through the development and use of intra-school (institutional) standard equipment of modern classrooms, creating conditions for the prevention of young teachers' emotional burnout.

The "Modern classroom" project aims at creating optimal conditions for work to improve the efficiency of the educational process. The final event is participation in the professional competition among classrooms organized by the education authorities.

The project "Business and psychological security" aims to overcome the syndrome of professional burnout, reduce anxiety and tension in interpersonal relations, the mental self-regulation ability of teachers, which contributes to a

positive change in individual psychological characteristics. Implementation of the project involves: theoretical and methodological analysis of the emotional burnout syndrome in foreign and Russian literature, planning activities based on the needs of schools; the diagnosis of the predisposition to stress degree, measuring the degree of emotional burnout; the development of preventive measures against emotional burnout among teachers; organization and conduct of training sessions, sports and art therapy

#### ***4.2 Building up the methodological potential of young teachers***

Within this area such projects as “The management of introduction of the Federal State Educational Standard”, “Toward the Professional Standard” promote the increase of young teachers’ methodical potential.

The implementation of “The management of introduction of the Federal state educational standard” project involves: evaluation of professional and creative development as well as professional difficulties of a young teacher, actualization of the creative educational orientation, transformation of the updated knowledge into an effective personal paradigm for professional and creative development based on the formation of an individual educational path; management of difficulties by means of teachers’ round tables, training seminars, tutor support, understanding of new standards, development of creative potential of the teacher on the basis of the management, advisory assistance from administration, analysis of creative activity with the adjustments of the “Self - concept”.

The “Toward the professional standard” project involves the preparation of young teachers to implement the professional standard of the teacher in order to improve the quality characteristics.

#### ***4.3 Advanced training of novice teachers***

Within this area such projects as “Professional development”, “Points of growth” are implemented in the educational organizations. They contribute to improving the skills of young teachers, their encouragement and support, to enhance the prestige of educational institutions through the growth of teacher’s professional skills.

The aim of the project “Professional development” is the professional competence and sustainable self-reflection skills formation, making the structural integrity of the pedagogical activity. This aim determines the following project stages: the course analysis, questionnaires, organization and conduct of personalized training courses, training seminars at school, project work presentation.

The teaching staff of the educational institution requires innovations and search for fresh resources. The “zone of growth” is crucial for every teacher, especially for a beginner. The project “Points of growth” is designed to help young teachers undergo the application procedure and job relevance certification, to increase the motivation level for self-education, self-realization, and creativity in the professional activity

#### ***4.4 Individual support of novice teachers***

Within the fourth area the project “Mentoring and partnership” is being organized in educational institutions. It contributes to the activation of training, consultative targeted support for each novice teacher and motivation of young teachers to increase their professional skills.

Development of conditions for teachers' adaptation and consolidation in school is relevant for heads of educational institutions when working with young personnel. It is important to identify difficulties and adapt the system through the development of a long-term action plan, joint discussion of problems, methodological weeks, etc.

#### ***4.5 Corporate culture development and social partnership development***

Within the fifth area the projects “Corporate culture” and “Social partnership” are implemented. They contribute to the creation of the educational space as an environment of the widest possible range for the personality development of a young teacher, acting in accordance with social values and priorities, expectations and interests.

The coherent system of values and behavioral norms allows educational organizations to set a single development focus for their own employees. Well-implemented corporate culture allows not only to improve the process of internal communication but also to ensure the staff loyalty, which helps to maintain the team spirit. It contributes to the improvement of the quality of education. The project is accompanied by a survey, analysis of the general education social capital, SWOT-analysis, planning of joint activities, discussion of the “Pedagogical code of ethics.”

The aim of “Social partnership” is to create an open community of different social institutions, which allows improving the quality of general educational work, solving the problem of student socialization

## **5 Empirical example of the conducted pedagogical experiment on the novice teachers immersion projects**

In the study of the problem of novice teachers' induction to the profession,

their immersion into the real educational environment of the secondary school we conducted a pedagogical experiment in which novice teachers from several educational institutions (63 people) involved in the system of novice teachers immersion projects (42 of them having a bachelor's and master's degree in Pedagogy; 21 - not having a bachelor's degree in Pedagogy, but having a master's degree in Pedagogy). The main task of the experiment was to determine which vector directions of young teachers support programs are more conducive to their professional development. During the experiment initial research interviews were conducted before the involvement of young teachers in immersion projects (August-September, 2017), as well as final research interviews (January, 2018). The evaluation of the results of the activity was carried out using reference parameters. During the interviews, young teachers were asked to give their viewpoints regarding the impact of the reference parameters on their professional development (the formation of psychological and pedagogical competence, the development of methodological potential, the development of corporate culture, etc.). At the initial stage, opinions were more assumptive and based either on teachers' previous experience of participating in projects or on their intuition. The final interviews were of longer duration; teachers' conclusions were well-reasoned and valid due to their extended experience in each of the reference parameters of the survey. Evaluation of the experimental results was carried out by statistical processing of small samples (the Mann-Whitney U test). The results of the pedagogical experiment are presented in Tables 1 and 2

**Table 1**  
**THE REFERENCE PARAMETERS AFFECTING THE PROFESSIONAL DEVELOPMENT OF NOVICE TEACHERS - GROUP 1 (42 MASTER STUDENTS WITH BACHELOR'S AND MASTER'S DEGREES IN PEDAGOGY)**

The reference parameters	Initial interview	Final interview
Growth of the motivational component: - project activities on the organization of the working environment of the teacher by equipping the classroom with modern technical facilities; - project activities on novice teachers' emotional burnout prevention	34  38	35  41
Methodological capacity increase: - project activities organized by the school's methodological service to innovate the content and teaching technologies caused by the introduction of the Federal State Educational Standard	35	39
Professional development: - project activities on novice teachers' professional training	27	28
Continuing individual support of novice teachers: - project activities on the involvement of young teachers in the processes of mentoring and partnership.	26	28

The reference parameters	Initial interview	Final interview
Corporate culture level improvement: - project activities on the development of social partnership, the creation of the educational space of school for personal development	31	33

**Table 2**  
**REFERENCE PARAMETERS AFFECTING THE PROFESSIONAL DEVELOPMENT OF NOVICE TEACHERS - GROUP 2 (21 MASTER STUDENTS NOT HAVING A BACHELOR'S DEGREE IN PEDAGOGY, BUT HAVING A MASTER'S DEGREE IN PEDAGOGY)**

The reference parameters	Initial interview	Final interview
Growth of the motivational component: - project activities on the organization of the working environment of the teacher by equipping the classroom with modern technical facilities; - project activities on novice teachers' emotional burnout prevention	25  17	26  21
Methodological capacity increase: - project activities organized by the school's methodological service to innovate the content and teaching technologies caused by the introduction of the Federal State Educational Standard	225	28
Professional development: - project activities on novice teachers' professional training	18	15
Continuing individual support of novice teachers: - project activities on the involvement of young teachers in the processes of mentoring and partnership.	28	33
Corporate culture level improvement: - project activities on the development of social partnership, the creation of the educational space of school for personal development	18	20

The results of the study reveal the following. Positive dynamics is observed in two groups of respondents on the reference parameter “Growth of the motivational component”, where a larger increase in the results of the final interview is noticed in the project activity on novice teachers’ emotional burnout prevention. The project “Business and psychological security” implemented by the psychological service of the educational institution made it possible to clearly organize and plan the work of young teachers, to overcome the monotony of work, to reduce the deficit of administrative, social and professional support. The project “Modern Classroom” designed to promote the growth of motivation in young teachers showed a slightly positive dynamics in two groups of respondents. This is due to a relatively low level of teachers’ initiative caused by the lack of competence in the field of modern technical teaching aids, lack of ability to systematize the media library on the profile of the subject. Besides, the development of digital laboratories for the subjects that initiated the “Modern Classroom” project realization demands

from a novice teacher to have a high level of ICT technology knowledge and is time-consuming. The reference parameter “Methodological capacity increase” is characterized by a sharply positive dynamics in the two groups. It comes from the fact that the content of education is innovated in the school because of the transition to the new federal state educational standards for general education. A positive trend was observed in the first group of respondents in reference parameter “Professional Development”. The negative dynamics in this parameter in the second group of respondents is explained by the lack of differentiation of educational content for the students not having a bachelor’s degree in pedagogy. The project “Mentoring and partnership”, according to the respondents, had a positive impact on their professional development.

As for the reference parameter “Continuing individual support of novice teachers”, there is a positive move in the two groups of respondents. In the group of novice teachers having a bachelor’s degree on another major (not in Pedagogy), this parameter is given more importance. The reference parameter “Corporate culture level improvement” is connected with the level of social capital formation of the educational institution. Project activities aimed at developing social partnership, as well as the creation of special educational school space for personal development both for students and teachers had a positive influence on the development of novice teachers. The positive dynamics in the two groups of respondents is thanks to the equal participation of everyone in collective interaction

## 6 Discussion

Professional adaptation of novice teachers is associated with high emotional tension, as they are just learning a new field of activity, committing many mistakes, experiencing setbacks. At this time, the young teacher is guided by mostly opposite standards “good - bad”, and any unforeseen event in school life causes either a positive or a negative, depressed state.

Pedagogical obstacles the novice teachers meet at school shouldn’t be considered only in a negative way. Their overcoming is to some extent necessary and even useful as it has a stimulating nature, contributes to the professional and creative growth of a teacher. This, in turn, allows the novice teacher to re-evaluate and optimize teaching activities.

Didactic challenges have shifted from mastering the content of new programs and textbooks in the 1980s to the acquisition of work experience using the latest teaching technologies, which is typical of modern educational concepts and wide school and university practice. It follows that one of the key factors ensuring successful adaptation of future teachers is the relevant, reasonable and proper content of their university training.

Problems arise due to the fact that a young teacher at the beginning of his



professional career has sufficient knowledge, but insufficient skills, since he has not yet formed professionally significant qualities, so the young teacher needs constant methodical help from the teacher-mentor.

## Conclusion

The objectives of the induction to the profession of a young teacher programs in Russia are the following: to develop a systematic approach to the organization of continuous education and improvement of professional competence of novice teachers in general education; to increase motivation of novice teachers for active implementation of innovative technologies and participation in competitive movement; to enhance the level of social capital; to improve the system of scientific and methodological work and its organization; the activation of creative potential of young specialists in the synthesis of advanced pedagogical experience and its extension; the formation of the successful young teacher image through the formation and timely maintenance of the portfolio; the creation of a consolidation system of young professionals in the educational institutions.

Provided that we consider the activity of a novice teacher as a manageable system, then it is possible to identify several management objects, where quality determines the implementation of new standards.

The mission of novice teachers' induction to the professional environment programs is to convey information about the main modernization spheres of Russian education to every newcomer, create conditions for the continuous development of teachers' professional knowledge and skills, improve their pedagogical skills and, consequently, the quality of education

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# INITIAL TEACHER TRAINING AND THE NATIONAL PLAN FOR DIGITAL EDUCATION (NOP - ESF)

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This paper focuses on new teachers who attended the Italian National Plan for Digital Education (NPDE) training courses between 2015 and 2017. Started in 2016, the NPDE was further developed thanks to the contribution of the 2014-2020 National Operational Programme for the School, "skills and learning environments" which supported 275 NPDE local training hubs in order to organize four training modules aimed both at new teachers and the more experienced ones. This paper analyses the feedback provided by the 1,342 new teachers who filled in the evaluation questionnaires handed out at the beginning and at the end of the modules. The objective of this chapter is to highlight the relations between the preferences expressed by the new teachers within the initial skill assessment and the issues raised in the final questionnaires about the perception of the training programme.

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## 1 Introduction

Education and vocational training are deemed important not only for personal development but also as a contribution to social inclusion and cohesion and are considered crucial in solving unemployment issues.

Indeed, they are the main focus of the European strategy for developing competitiveness and sustainable growth. On 12 February 2001 the Recommendations of the European Parliament and of the Council mention “quality teaching” as a key element for European employment policies. In this respect, the Strategic Framework for Education and Training (ET 2020) includes quality of education and training among its four strategic objectives: *“to ensure high quality teaching, to provide adequate initial teacher education, continuous professional development for teachers and trainers, and to make teaching an attractive career-choice”*<sup>1</sup>. The OCSE TALIS inquiry draws up a programme for effective initial training based upon three integrated elements: *“solid academic knowledge of taught subjects, educational theory, including teaching skills and pupil support during learning, and practical classroom experience allowing the intern teacher to become adept in tackling daily difficulties in the field of teaching and in managing classrooms across a wide spectrum of situations”* (Eurydice, 2016, p. 11).

This specific attention on the educational system, along with the latest changes which affect our knowledge society, its technology and the related accountability models, directly impact on teachers’ work and urge them to continuously review their professional skills (Eurydice, 2016); however, the effectiveness of their teaching does not only depend on their continuous professional development, but even more on the initial training. The European Commission’s Communication on Rethinking Education<sup>2</sup> *“underlines the importance of the teacher’s initial training and invites member states to review its effectiveness and quality with regard to teaching, and to promote the induction phase of the teaching profession”* (Eurydice, 2016, p. 45).

This induction includes a structured training programme which aims at building the identity of the teaching profession (Weiss, 1999; Feiman-Nemser, 2001). This is a very intense phase, when teachers identify difficulties and problems relating to their profession (Huberman, 1989; Veenman, 1984), but at the same time it represents an opportunity to be guided through the double role of teachers and members of the educational community (Kelchtermans & Ballet, 2002; Zeichner & Gore 1990).

<sup>1</sup> Council’s Conclusions from May 12th 2009 on a strategic framework for European cooperation in the field of education and training (ET 2020), OJ C 119, 28.5.2009, p. 4.

<sup>2</sup> Commission’s Communication to the European Parliament, the European Council, the Economic and Social Committee, and to the European Committee of the Regions, 20 November 2012, on Rethinking Education: Investing in Skills for Better Socio-Economic Outcomes, COM/2012/0669 final.

In almost two-thirds of the European countries, new teachers in the public sector attend mandatory induction programmes outlined within the national policies. Nearly 60% of EU teachers with less than five years' teaching experience, and generally below the age of 40, have been involved in these programmes. With the recent so-called “Good School” reform (*La Buona Scuola* - law no. 107/2015), Italy has started to improve its national educational and training system through measures which include, among the others, the 2016-2019 Training Plan<sup>3</sup> for teachers which sets out national priorities, financial resources, and concrete actions.

Among the latter, one seems specifically relevant to induction programmes: the **National Plan for Digital Education**, which reacts to the 2013 Commission's Communication “Opening up Education through New Technologies”. This plan does devote 2 out of its 4 lines of action to initial training provisions:

- In-service training for teaching and organizational innovation
- Technical assistance for primary schools
- Strengthening initial training on teaching innovation
- Training for new teachers.

Started in 2016, the NPDE was further developed thanks to the contribution of the 2014-2020 National Operational Programme<sup>4</sup> for the School, “skills and learning environments” (more specifically, its ESF fund) which supported 275 NPDE local training hubs in order to organize four training modules aimed both at new teachers and the more experienced ones. Following modules were proposed: the 30-hour *Governing and Enabling Innovation* (aimed at School Headmasters and Administrative and General Service Directors), the 24-hour *Outlining and Accompanying Digital Innovation* (aimed at teachers with the role of “digital counsellor” within their schools); the 18-hour *Solutions for Integrated Digital Teaching* (aimed at those teachers who belong to the evaluation team), and the 18-hour *Strategies for Integrated Digital Teaching* (aimed at all teachers who wish to attend a training course dealing with the use of digital technology in the classroom).

This paper focuses on new teachers who attended the NPDE training courses between 2015 and 2017 funded by the 2014-2020 NOP.

Thus, our objective is to describe how new teachers approach ICT related

<sup>3</sup> The Plan was adopted by the Ministerial Decree DM n. 797 of 19 October 2016 and belongs to the extraordinary plan for the employment of new teachers included in law no. 107/2015

<sup>4</sup> The NOP contributes to the implementation of the ET 2020 strategy and to the improvement of the national educational system. It is open to all Italian schools divided into the three geographical areas identified by the Structural Funds: more developed, in transition and less developed regions. [http://www.istruzione.it/allegati/2014/PON\\_14-20.pdf](http://www.istruzione.it/allegati/2014/PON_14-20.pdf).

issues and the concrete use of the devices in the classroom, through the analysis of the training needs expressed in the two different contexts under observation, namely the Local training Hubs and the new Staff Training provisions, measured with two different tools: an evaluation questionnaire of the training courses delivered in the context of the training hubs, and the Skill Assessment tool in that of the New Staff Training.

## 2 Outline of the new teachers

The majority of the 1342 teachers who took part in the NPDE initial training chose the more general module on *Strategies for Integrated Digital Teaching* (83%), focused on testing and disseminating applications and methods together with active and collaborative learning processes, whilst exclusively in 2015, a few of them attended the modules dedicated to the role of digital counsellor, which implied a more complex training process<sup>5</sup>. In terms of gender and age range, the statistical profile of the new teachers follows the national trend<sup>6</sup>: they are mostly women (72%) aged between 35 and 44 (46%)<sup>7</sup>. 30% of them work in primary schools, whilst another 27% teach either technical-scientific subjects or humanities in the first stage of secondary school. Otherwise, with regard to the higher level of secondary schools, the highest participation was that of staff teaching literature, art, history, philosophy, pedagogy, and psychology (12%).

Analysing each of the three geographical areas of the Programme, when taking into account the type of module chosen, we learn that the highest number of teachers comes from Abruzzo (51% of Transition Regions), Campania (41% of Less Developed Regions), and Lombardy (23% of More Developed Regions).

As endorsed by a recent inquiry on digital skills and training needs of teachers located in the “Convergence Objective Regions (NOP 2007-2013)”, pre-primary school teachers hoping for a wider digital training, attended the *Strategies for Integrated Digital Teaching* modules (92% of pre-primary teachers). Information Sciences<sup>8</sup> teachers who have a higher mastery of digital tools preferred the modules devoted to digital counsellor. On the contrary, technical subjects’ teachers chose to further explore evaluation related issues

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<sup>5</sup> The digital counsellor (part of the school teaching staff) is responsible for identifying sustainable methodological and technological solutions (integrated learning environments, multimedia libraries, website upgrades, etc.), in order to disseminate digital culture and facilitate participation and creativity of the pupils. The teachers who took part in the digital counsellor training modules were largely male (58%).

<sup>6</sup> See Unità Italiana di Eurydice, *La professione docente in Europa*.

<sup>7</sup> The category aged 45-54 is also well represented (37%).

<sup>8</sup> According to the new definition of the examination classes, this includes staff who teach mathematics, or information technologies/science.

and attended the *Solutions for Integrated Digital Teaching (evaluation team)* module.

Table 1  
NEW TEACHERS (2015-2017) PER REGIONAL DISTRIBUTION, NOP INTERVENTION TYPE (%)

Region	Digital counsellors	Teaching staff	Innovation teams	Total
<b>Transitioning areas</b>	11	10	9	10
Abruzzo	67	50	56	51
Molise	17	20	0	18
Sardinia	17	30	44	31
<b>Less developed areas</b>	37	47	42	46
Basilicata	0	2	1	2
Calabria	5	8	14	9
Campania	48	41	42	41
Puglia	29	25	22	25
Sicily	19	24	22	23
<b>More developed areas</b>	53	43	49	44
Emilia Romagna	20	16	15	16
Friuli Venezia Giulia	0	8	6	8
Lazio	27	11	16	13
Liguria	7	4	2	4
Lombardy	17	23	27	23
Marche	0	2	3	2
Piedmont	10	13	12	12
Tuscany	17	15	15	15
Umbria	0	4	2	4
Veneto	3	3	1	3

### 3 Perception of the NPDE/NOP training provisions

This chapter analyses the feedback provided by the 1,342 teachers who filled in the evaluation questionnaires handed out at the end of the modules.

In the framework of the 2014-2020 ESF provisions, the European Commission addresses the implementation of proper and systematic evaluation processes to assess the achievement of the proposed objectives. Accordingly, the Italian Managing Authority drafted an Evaluation Plan<sup>9</sup> which outlines the activities to be carried out during the concerned period.

In line with this Plan, and in order to satisfy the need for an adequate data collection, *online questionnaires* were drafted in order to assess *the perception of the training modules*. These questionnaires have a common structure although they vary in terms of contents according to the subjects involved in each module.

The questionnaires were structured into a general section linked to the aims - as set out in the framework of the Call for Projects 6076/2016<sup>10</sup> - and a more

<sup>9</sup> The Evaluation Plan is part of the EU Ruling 1303/13, art. 114.

<sup>10</sup> Call for Projects 6076/2016 – Aimed at the Local Training Hubs identified for in-service training in the innovation of teaching and organizational methods – with the objective of financing the sub-actions related to action 10.8.4

specific section associated to the module attended.

The questionnaires asked participants a feedback on several aspects of the training received, with the following objectives:

- Acknowledging their general level of satisfaction;
- Assessing to which extent the training delivered was in line with participants' expectations;
- Assessing to which extent the training delivered positively motivated participants to the use of innovative technologies and methodological approaches.

The questionnaires were handed out before and after the modules' attendance; they are structured, standardized, and developed according to the most classical scaling techniques, used to surveying perceptions and opinions. They propose items against which participants express a score from 1 to 10.

This analysis aimed at assessing the level of knowledge of the NPDE after attending the module and its related usefulness for teaching; at the same time, the perceived benefits of the modules' contents were embedded within the two dimensions of their "effects on teaching" and "professional impacts".

With regard to the first dimension, the proposed aspects are connected to the themes tackled within each module, and by the NPDE overall provisions<sup>11</sup>, while the second dimension includes aspects relating to the level of teachers' autonomy, their motivations, and self-confidence<sup>12</sup>.

Results underline that teachers deemed useful the training contents firstly in strengthening their motivation towards the implementation of teaching innovation through digital technology, and in improving digital skills to be spent in concrete teaching actions.

On the contrary, those elements related to the development of digitalization of school administration and promotion of open data management have been judged as less useful also considering that these appear rather far from the overall teacher's profile.

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"Training of school teachers and training in innovative technologies and methodological approaches" and to the implementation of specific training provisions.

<sup>11</sup> In detail, the themes are: strengthening the knowledge of the NPDE; promoting PTOF (Training Offer Triennial Plan) planning in line with the NPDE; strengthening the motivation to implement teaching innovation through digital technology; promoting the learning of digital solutions to be concretely applied in the classroom; promoting the creation of digital profiles (coherently with the NPDE) in the school; promoting Bring Your Own Device (BYOD) policies; promoting the development of the digitalisation of school and teaching administration; promoting the open sourcing of school data and services to private citizens and enterprises; promoting the planning and realisation of team work models.

<sup>12</sup> In detail, the themes are: improving personal level of professional autonomy; strengthen personal motivation; improving self-skill confidence; starting and consolidating relationships with colleagues, with a view to share and compare professional experience; developing new web-based projects with course colleagues.



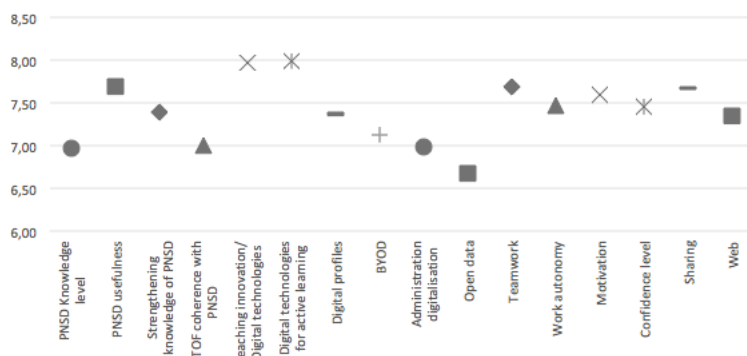


Fig. 1 - Effect on teaching and Professional impacts (average value)

It is possible to identify a few significant meaningful findings in relation to the gender of the participants and the educational stage they teach in<sup>13</sup>.

In the first case, male teachers declare a better mastery of digital skills in terms of *elaborating information, communication, content creation, and security issues*<sup>14</sup>. Inversely, female teachers assigned higher scores to other course contents such as *NPDE knowledge, promotion of the coherence between PTOF and the NPDE, improving the motivation towards implementing teaching innovation through digital technology* and to other aspects of the professional scope (*Strengthening motivation, improving the level of self-confidence in own skills*).

Considering the educational stage, primary school teachers are the most enthusiastic in terms of perceived usefulness, whilst secondary school ones are the most critical.

<sup>13</sup> These relations were analysed via the use of variance analysis (ANOVA), a statistical technique which allows for the comparison between two or more groups of data based on the internal and external variabilities of the groups (Levine D.M. *et al.*, 2002).

<sup>14</sup> Regarding these four digital skills, the self-positioning levels were Basic user, Autonomous and Advanced.

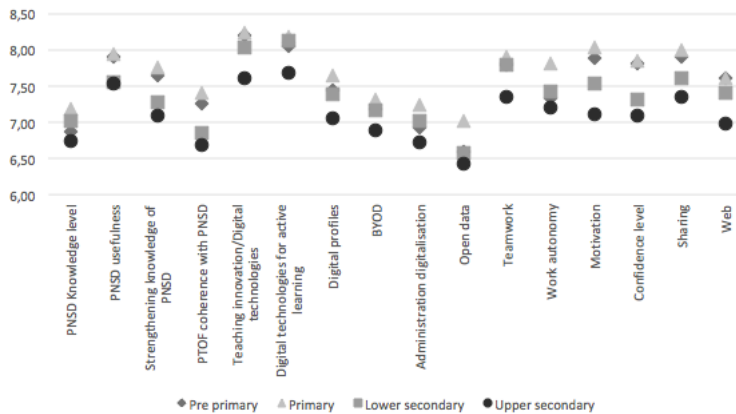


Fig. 2 - Effect on teaching and Professional impacts per teaching stage (average value)

In order to understand whether the training offer was perceived as helpful and relevant to daily teaching, the relation between the previous level of knowledge of the NPDE and the relevancy of its learning outcomes has been studied. The level of this relation is rather low. This means that a greater level of knowledge of the NPDE does not necessarily imply the perception of a greater relevancy of the course contents to daily teaching activities, or a consequent professional development.

The analysis of the relation between the “effects on teaching” and “professional impacts” dimensions shows a strong association between the motivation to implement teaching innovation through digital technology, and the improvement of the professional autonomy level, professional motivation and self-skill confidence.

Finally, teachers highlight how their improvement in digital learning goes together with a rise in the level of professional autonomy.

As a further in-depth level of reflection, we analysed the principal elements<sup>15</sup> in order to gather into a single dimension the two macro-categories (effects on teaching/professional impacts) and assign an overall scoring to each teacher. This allowed to compare the teachers’ opinions and identify those differences which occur according to the various teaching stages: as already underlined the more critical scores are assigned by those teachers who work on the higher educational stages.

<sup>15</sup> The Analysis of principal elements transforms a group of inter-related numerical variables into a smaller number of items called principal elements, allowing a better synthesis of the information mastered (Di Franco, 2005).

## 4 New teachers between Skill Assessment and the NPDE

*“The teacher must be given the opportunity to continue to systematically reflect on his or her teaching practices, to carry out research, to evaluate the effectiveness of educational practices and to modify them in necessary, to evaluate his or her needs with regard to further training, to work in close collaboration with colleagues, teachers, and the local community” (OECD, 2014)*

In this framework, Skill Assessment tools are important devices to develop a reflection on personal abilities and consequently plan the individual professional development and that of the more general learning environment (Mangione & Pettenati, 2017).

The skill assessment tool used is made up of 47 descriptors, structured around 9 dimensions and 3 areas of competences (Teaching, Organization and Professionalism) which outline the professional profile of the teacher<sup>16</sup>.

The objective of this chapter is to highlight the relations between the preferences expressed by the new teachers within the initial skill assessment and the issues raised in the final questionnaires about the perception of the training programme. Thus, this analysis aims at understanding the relationship between the declared professional needs and the actual training received on digital technologies, also through a comparison with the opinions of the more experienced teachers.

The educational system has been witnessing a sudden development of the ICT devices for the last decades, thus the experts started to analyse the level of integration of those technologies in the professional practice of teachers. (Muscarà & Messina, 2014).

Therefore, the related training provisions became an important issue for Italian teachers. According to the 2013 TALIS Survey, this is one of the most important training needs, pointed out by the teachers, both in relation with the teaching implications and for the concrete use of ICT devices in the professional environment.

Going back to the results of our analysis, the highest and lowest scores are those related to the dimension of “effect on teaching”. Indeed, the *motivation to develop teaching innovation through digital technology* and the *improvement of digital skills to be spent in concrete teaching actions* are the items with the highest values. This result is confirmed by the answers given by the trainees – independently of their experience – where the scoring on motivation within the second dimension is the highest.

On the other hand, the *development of the digitalisation at school and*

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<sup>16</sup> For an in-depth look at the initial Skill Assessment template, see the following link: <http://neoassunti.indire.it/2018/toolkit.html>.

*teaching administration, promoting open sourcing school data and services to private citizens and enterprises and promoting the coherence between PTOF projects and the NPDE* are the aspects on which the training course seems to have had the lower impact (see above chapter 2).

Indeed, teachers' openness to the use of ICT in their daily work is actually influenced by several factors both intrinsic and external (Rogers, 2000; Ertmer, 1999; 2005). The outlined model of the *Technology Acceptance* (Bagozzi *et al.*, 1992; Davis *et al.*, 1989, Venkatesh *et al.*, 2003) identifies among the intrinsic factors, the perception of usefulness and that of user-friendliness of the ICT devices.

Our empiric evidences confirm the statistically meaningful relations between the concrete use of the learning outcomes, the level of helpfulness of the ICT devices in the professional context and their user-friendliness. A direct consequence of the latter can be considered the self-assessment process of the digital skills.

Indeed, less than the 30% of teachers consider themselves as "advanced users", although varying according to the kind of skill assessed.

In general, male teachers declare a better mastery of all digital related issues (fig. 3).

Finally, about 95% of the teachers plan to concretely use the learning outcomes of the training received, in their classrooms.

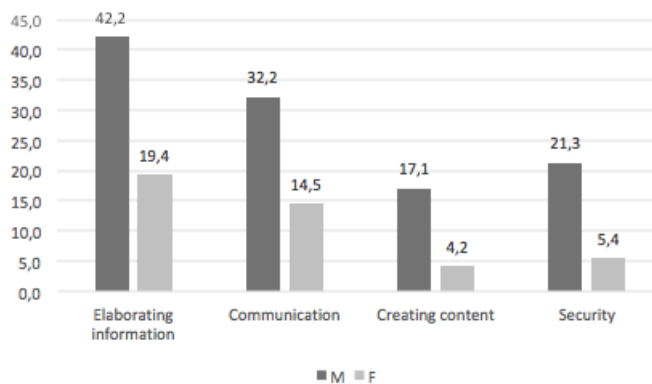


Fig. 3 - Digital skill self-assessment: Advanced users per gender

Considering the initial skill assessment carried out, the items related to the three competence areas, Teaching, Organization, and Professionalism have been further analysed. For each area, we identified three ranking levels of teachers' self-assessment with regard to personal work experience.

Within the Teaching area, teachers declare to be highly skilled only in 10% of cases, whilst most of them place themselves at the average level. On the contrary, in the Organization and Professionalism areas about a half of the teachers place themselves at the highest skill level.

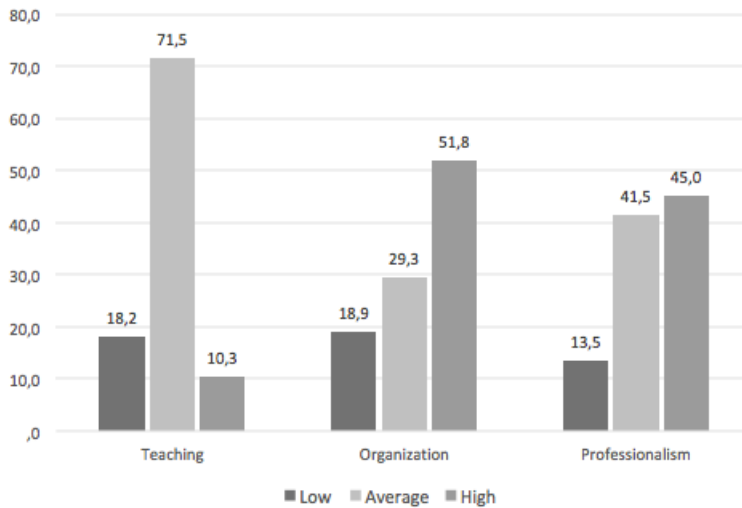


Fig. 4 - Skills Assessment: Areas of expertise

Going into the detail of the skill families, we notice that in the **Teaching** area many teachers show difficulties in setting up learning schemes. In accordance with the findings highlighted by Magnoler, Pettenati *et al.* (2017), teachers are particularly weak with regard to three aspects: *properly mastering the key concepts of their subject in order to sufficiently outline an educational path fitting to each pupil and to the overall class; identifying obstacles to learning and the reasons behind them; identifying those aspects that are functional to learning.*

Confirming the data gathered in the NPDE questionnaire, about a half of the new teachers declare to be able to take advantage of the opportunities offered by digital technologies to improve learning processes and supporting their pupils.

In the area of **Professionalism**, the most widely selected family of skills is that of *Taking on the ethical obligations and issues of the profession*, particularly those related to the respect of rules, roles and commitments undertaken within the professional context, and mutual loyalty, cooperation and trust as key points for the professional choices. Again within the area of Professionalism, it is interesting to acknowledge that 70% of teachers declare that their digital skills are developed enough to support their pupils in the use of technology (Magnoler

*et al.*, 2017).

If we compare the area of technology with the digital skill self-assessment, we notice that the teachers who identify themselves as “advanced” users are also the most likely to declare to be able to take advantage of the potential of digital devices and the internet to collaborate effectively and productively with other colleagues and/or experts (72% versus 59% for plainly autonomous users and 42.5% of basic users).

With respect to the dimension of taking *care of continuous professional development*, we observe a low level of self-confidence in the capacity to make evident and thus share with different actors (school headmasters, parents, colleagues) their improved expertise, as well as the difficult to draw from the reflection on the problems that affect teachers, useful elements to innovate teaching practices. Indeed, these aspects only gather 30% of preferences.

In the area of **Organization**, teachers’ preferences do not focus on specific families of skills. Although the 52% of teachers place themselves at the higher level in this area, some of the items are scarcely selected. Indeed, less than one third of the teachers declare to be able to identify the elements of innovation which would benefit their school context, while slightly over one third of them feels open to the dialogue and joint research with their colleagues regarding their own professional practices.

Furthermore, only the 29% of the surveyed teachers would be able to propose and manage consultation moments with pupils to improve the school’s organization, whilst as little as the 23% feel able to effectively master current educational issues and manage a group of parents on such themes. Regarding the choice of these items, there are important differences among the various school stages: they were addressed by the 66% of the higher secondary school teachers: exceeding the figure related to other colleagues even to 10 percentile points.

In short, there is no difference between new teachers and more experienced ones in their approach to the use of ICT devices in teaching.

However, it appears necessary to reflect on this category: the concept of “new teacher” needs to be questioned as it does not *count* the years of precarious employment which strongly characterise the teachers within the Italian educational system. Still, in-service training is perceived by the surveyed teachers as a useful moment for an overall reflection on their profession, regardless their level of experience.

Concerning the training module attended, the positive perception of its usefulness in terms of motivation to implement teaching innovation through ICT and the learning of digital skills to be concretely used in the classroom, confirm the importance of training in this field. However, this should take into account the needs outlined in the initial skill assessment directly connected

with the organization of the learning environment, where thus, according to Braukmann (1993) the focus is on technology as a method, in other words as an overall educational strategy which supports learning processes.

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# TEACHERS INDUCTION AND DIGITAL CULTURE. THE CASE OF SOUTHERN ITALY TEACHERS ATTENDING TFA

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This paper aims at grasping the digital culture of teachers participating in an Italian teachers' induction context, by referring to the Finnish Opeka theoretical and methodological model. Namely, we grasp how Southern Italy participants in a TFA course aimed at educate to teach students with special educational needs shape their own digital culture. We first describe how the general context of TFA is featured as one of the possible teachers' induction paths in Italy. Then, we show both analysis and results of the research. As for this, we first run Principal Component Analysis to detect what factors compose the participants' digital culture. Then we run independent samples t-test to observe differences between males and females, and preservice and in-service teachers (indeed, even if all of the teachers are attending the TFA as an induction experience, some of them already work in fields different from the special educational needs one). Results show that two

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of the four detected factors are similar to those proposed by the Finnish literature. The other two, instead, differ from them. Furthermore, it emerged that, on average, males have higher scores than females on the factors; these differences are significant on three factors. Last but not the least, experienced teachers have, on average, higher scores than preservice participants. However, these differences are not significant.

## 1 Introduction

European policies about education move toward the integration of Information and Communication Technology (ICT) in several life contexts. This approach is the result of the hard path that the knowledge society is doing (Messina & De Rossi, 2015) to integrate educational models in the contemporary society. In this process, the role of the teacher must be rethought and new teaching skills have to be developed. These competences imply both appropriate design of innovative learning activities and use of ICT in education (Gallina, 2008). In this perspective, the teacher is the director of a complex educational scenario, mediating between the learning practices the student participates in and the chances given by technology. Some studies (Avvisati *et al.*, 2013) showed the teachers' difficulties of integrating educational technological tools. Such a difficulty often depends on "external" obstacles (like the lack of the adequate equipment in schools), which can be defined as first level barriers (Hew & Brush, 2007). However, there is also a second level of obstacles, which are the internal ones and are related to the know-how of teachers and schools about the educational technology, the teachers' digital skills, and their attitudes, beliefs and perceptions about the digital tools (Ertmer, 2012; Gallego & Masini, 2012). In this plethora of limits, the growing attention on the digital skills preservice teachers makes the understanding and arrangement of the educational context even difficult and underlines the need of contextualizing the teachers' expectations, accessing to technology, and integrating the use of technology with the instructional support (Dexter, 2003). According to Fullan (2007), furthermore, the students' learning experience and the change processes it causes depend on what teachers perceive and think about learning and innovation. Howard (2013) suggests that the risks connected with the teachers' approach to innovation can be reduced by supporting teachers themselves in gaining familiarity with ICT to reduce bad feelings like anxiety or dread. This process can be realized through a continuous support by the school where teachers work.

A more analytic view is proposed by Viteli, Sairanen, & Vuorinen (2013), which elaborated a four-factors schema to describe how teachers' digital culture is shaped. More specifically, authors suggest that the following four dimensions characterize such a culture: 1) Leadership and Management; 2) Resources and

Access to resources; 3) Confidence and Competence; 4) Motivation and Time (see “Context” paragraph for further explanation).

In this paper, we connect the teaching induction process and the development of a digital culture at school. More precisely, we try to understand how Italian teachers participating in the induction process as burgeoning experts in special educational needs perceive the use of ICT in education. We will use the four-factors schema just introduced as a starting point to grasp the dimensions shaping the digital culture of the participants in our study. As defined in the following paragraphs (see “Context” paragraph), we will first describe one of the Italian teacher induction path, which is called TFA. Then, we will go in depth of our research<sup>1</sup>.

## 2 Aims

The aims of this paper are:

- To describe one of the possible Italian teachers’ induction process, which is called “TFA” (Tirocinio Formativo Attivo - Active Formative Training);
- To analyse which factors are associated with the digital culture at school in Italian participants in a TFA course for teachers of students with special educational needs;
- To analyse if and how those factors differentiate in relation to some demographics, like both participants’ gender and teaching experience.

## 3 Context

Our research was inspired by Opeka (*op. cit.*), which is a Finnish project lead by the University of Tampere. It was aimed at grasping the digital culture of schools by answering 106 five-point (0=completely disagree, 5=completely agree) Likert items exploring the dimensions shaping the teachers’ perception of ICT at school (digital environment, organizational culture, pedagogical activities, evaluation practices). During Opeka project (since 2004 and still ongoing), 3526 teachers were interviewed in Finland. Right after the compilation, teachers received a dynamically generated report with the results of the questionnaire compared with the findings of their own school and the municipality where this is located. As results, it emerged that four different factors shape the teachers’ digital culture, which are “Leadership and Management”, “Resources and access to resources”, “Confidence and Competence”, and “Time and Motivation”. “Leadership and Management” dimension refers to the tendency of teachers of arranging the digital tools they use for learning activities, the cooperation they

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have with colleagues and technical experts at school, the pressure they feel to do something else and the pedagogical support by expert colleagues. The factor “Resources and access to resources” involves the idea of having insufficient resources, technical problems and technical support at school. The factor “Confidence and competence” refers to the skill and experience teachers have about the use of digital devices in the teaching activities. Instead “Time and Motivation” factor mainly involves the motivational dimension which supports the teachers’ use of ICT in education.

In October 2017, we repeated the administration of the questionnaire in Apulia, a Southern Italy region. We involved 161 (M,17; F,144) teachers participating in a TFA course. Before explaining the questionnaire’s administration process and the overall research method (see paragraph “Methodology”), we describe the Italian context within which we collected data.

In Italy, several alternative paths are provided for becoming a teacher and this process is strictly connected with the induction phase, since very often teachers approach the school environment as trainees during those formation paths. In Table 1, we describe how people in Italy can get the qualification of teachers in relation to the school degree (kindergarten/primary school or middle/secondary school). To make the processes clearer, we also indicate the age students have at each school stage.

Table 1  
ITALIAN TEACHERS’ QUALIFICATION PROCESS

	Kindergarten and primary school	Middle and secondary school
Age of students	3-10 years	10-18 years (compulsory until 16 years old)
Teachers’ qualification path	5-years Master degree called «Scienze della Formazione Primaria» (Primary Education Sciences)	1-year specialization degree. This can be attended after the Master degree on a specific topic (e.g. Literature, Math, Science, Foreign language, and so on)

After the qualification, teachers can work as substitute teachers or can participate in a public competitive exam to become tenured teachers. For the secondary school, therefore, the qualified person will teach in the field she had the master degree about by using the pedagogical tools learnt during TFA. Indeed, during TFA, the future teachers participate in a number of theoretical lectures and in a training activity, during which they cooperate with more experienced teachers in real classrooms. Let us make one example to better explain this process. If I do love teaching 3-10 aged students, I need to graduate myself in a 5-years master degree called “Scienze della formazione primaria” (which

actually unifies in a five-years university course both bachelor and the master degrees). During this course, I will attend several training activities at school, to observe the experienced teachers, to collaborate with them and to start gaining confidence with the school context as a teacher. After the qualification, I can already teach at the kindergarten and the primary school.

TFA are organized by public universities and to become a teacher for students with special educational needs you need to attend TFA even to teach in both kindergarten and primary school. The participants in this research were teachers attending TFA for special educational needs organized at the University of Foggia for 2017-18 academic year. Therefore, in the entire sample of participants, there were four different groups of teachers corresponding to the four school grades existing in Italy (Kindergarten, 28%; Primary school, 28%; Middle school, 17%; Secondary school, 27%). Furthermore, some participants are already teachers taking the qualification for special educational needs (85,5%), some others are becoming teachers through TFA course (3,5%), some others are at the first year of teaching (11%).<sup>2</sup>

## 4 Methodology

### 4.1 Data collection

The original Finnish questionnaire was translated to Italian by two researchers who first made a literal translation. Then, a broader team of researcher (composed by four experts) checked the translation and rearranged it by taking in account the Italian cultural aspects. During a third step, 10 teachers were involved to complete the questionnaire and indicated eventual unintelligible aspects. As a further step of the questionnaire's preparation, the team arranged the final questions according to the teachers' suggestions. Like the original Finnish questionnaire, each of the 55 items was structured as a five-points Likert scale (0=completely disagree, 5=completely agree) and the questionnaire was administered during the first week of the course by an online google module.

### 4.2 Data analysis methods

After collecting data, we used the following methods of analysis:

- Explorative factorial analysis through Principal components method (PCM);
- The calculation of the reliability of the factors emerged through the factorial analysis;
- The calculation of the correlation of the factors emerged through the

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<sup>2</sup> In Italy, there are other possible alternative induction processes as well, since many new laws regulating this experience were introduced in the last years and months. These should be executive in the next years.

factorial analysis;

- The creation of four sum variables corresponding to the reliable factors;
- The independent samples t-test to detect differences between males and females;
- The independent samples t-test to detect differences between experienced teachers and not experienced teachers.

All of the analysis was made through IBM SPSS software.

## 5 Results

After data were collected, a first principal component analysis (PCA) was conducted on the 100 items (106 less the demographic items) with orthogonal rotation (varimax). The Kaiser-Meyer-Olkin measure verified the sampling adequacy for the analysis.  $KMO=,762$  («good» according to Field, 2009), but not all KMO values for individual items were above the acceptable limit of .5 (Field, 2009). Bartlett's test of sphericity  $\chi^2 (2346) = 6,722, p < ,001$  showed that not all the correlations between items were sufficiently large for PCA. Therefore, just items with correlations larger than .3 were taken (Field, 2009), which were 55. A further PCA was run with the 55 selected items with orthogonal rotation (varimax). The Kaiser-Meyer-Olkin measure verified the sampling adequacy for the analysis,  $KMO=,813$  («great» according to Field, 2009), and all KMO values for individual items were above the acceptable limit of .5 (Field, 2009). Bartlett's test of sphericity  $\chi^2 (1653)=5,927, p < ,001$  showed that all the correlations between items were sufficiently large for PCA. Table 2 shows the number of items clustered on the same component and the variance explained by each component (due to the aims of this article we do not present here the entire factor analysis loading table).

Table 2  
COMPONENTS, NUMBER OF ITEMS, VARIANCE AND RELIABILITY

Component	Number of items	Variance explained	Reliability (Cronbach's $\alpha$ )
1	17	15,79 %	.93
2	17	14,09%	.93
3	12	13,55%	.90
4	8	8,64%	.87

By analysing the items composing each factor and according to literature, we defined the components as follows. Component 1 represents the “Use of ICT and teaching”, since it implies items exploring the reasons why teachers could use digital tools during their job week or their students should use them (e.g., to build collaborative knowledge, for interdisciplinary learning activities,



to interpret information, and so on). Component 2 represents “Innovative teaching and evaluation”, which implies items grasping if and how teachers can use new technology for innovative learning and assessment activities (e.g. I use e-portfolios to evaluate students, I use learning analytics to assess the students’ activities, I use virtual reality activities, and so on). Component 3 represents “Rules and digital skills”, which involves those items analysing how teachers perceive the rules related to the use of technology (e.g., When I use a new digital tool I always read the terms of use and conditions, I guide students to protect themselves from the common risks related to the use of new technology, I know how to use digital materials for teaching, etc.). Component 4 represents “Educational community”, which implies items exploring the technical support in the use of digital tools by colleagues and specialists (e.g. I receive technical support for the digital tools at school). Furthermore, it is saturated by items analysing the relational dimension of the school community and the eventual support it gives to the teachers (e.g. We share suggestions and support each other about the use of new technology for education). The definition of the factors was first made by the Italian research group and then it was compared with the Finnish research group, in order to both respect the previous study and the specific characteristics of the new one.

After running the PCA, we checked the correlation among the four factors through Persons’  $r$ . As depicted in Table 3, results show that Component 1 has a significant positive relationship with Component 2,  $r=.61$ ,  $p$  (one-tailed)  $<.01$ ; Component 3,  $r=.72$ ,  $p$  (one-tailed)  $<.01$ ; Component 4,  $r=.31$ ,  $p$  (one-tailed)  $<.01$ . Component 3 has a positive significant relationship with Component 2,  $r=.74$ ,  $p$  (one-tailed)  $<.01$  and Component 4,  $r=.36$ ,  $p$  (one-tailed)  $<.01$ . Component 4 has a positive significant relationship with Component 2,  $r=.36$ ,  $p$  (one-tailed)  $<.01$  as well.

We also run the independent samples t-test to detect differences between males and females. Results show that, on average, male participants have a higher score ( $M=49,88$ ,  $SE=2,88$ ) than female ( $M=41,97$ ,  $SE=1,13$ ) on Factor 1. This difference is significant  $t(153)=-2,32$ ,  $p<.05$ . On average, male participants have a higher score ( $M=48,17$ ,  $SE=3,12$ ) than female ( $M=40,38$ ,  $SE=1,15$ ) on Factor 2. This difference is significant  $t(152)=-2,24$ ,  $p<.05$ . On average, male participants have a higher score ( $M=42,11$ ,  $SE=1,55$ ) than female ( $M=38,62$ ,  $SE=.89$ ) on Factor 3. This difference is not significant  $t(153)=-1,33$ ,  $p>.05$ . On average, male participants have a higher score ( $M=27,35$ ,  $SE=1,12$ ) than female ( $M=23,95$ ,  $SE=.58$ ) on Factor 4. This difference is significant  $t(155)=-1,98$ ,  $p>.05$ . Therefore, by giving a general glance to these results, there emerges that, on average, male have higher scores than females on all of the factors. These differences are significant for Component 1 (Use of ICT and technology), Component 2 (Innovative teaching and evaluation) and Compo-

ment 4 (Educational community). They are not significant for Component 3 (Rules and digital skills).

Much more interestingly, we run the independent samples t-test to detect differences between in-service teachers (80%) and preservice teachers (people having the first teaching experience during the TFA training) (20%). Results show that, on average, experienced teachers have a higher score ( $M=43,62$ ,  $SE=1,16$ ) than not experienced teachers ( $M=39,25$ ,  $SE=2,92$ ) on Factor 1. This difference is not significant  $t(151) = -1,46$ ,  $p>.05$ . On average, experienced teachers have a higher score ( $M=41,62$ ,  $SE=1,18$ ) than not experienced teachers ( $M=39,58$ ,  $SE=3,33$ ) on Factor 2. This difference is not significant  $t(150) = -,66$ ,  $p>.05$ . On average, experienced teachers have a higher score ( $M=39,58$ ,  $SE=,86$ ) than not experienced teachers ( $M=35,87$ ,  $SE=2,43$ ) on Factor 3. This difference is not significant  $t(151) = -1,64$ ,  $p>.05$ . On average, experienced teachers have a higher score ( $M=25,51$ ,  $SE=,59$ ) than not experienced teachers ( $M=23,38$ ,  $SE=1,41$ ) on Factor 4. This difference is not significant  $t(153) = -,771$ ,  $p>.05$ . Therefore, by looking by a glance this analysis, we can see that, on average, experienced teachers have higher scores than not experienced teachers on all of the factors, but that these differences are not significant.

## Conclusion

The issue about the teaching induction process represents a crucial aspect of the contemporary learning world, and it is interviewed with the development of innovation in learning. As for this, “Determination of the attitudes of preservice teachers, who live in an age of technology and get ready to raise future individuals, is of paramount importance both educationally and professionally” (Akturk *et al.*, 2015, p.4286). The factors composing both preservice and experienced teachers’ digital culture have been defined by the existing literature (*op. cit.*). However, literature asks for new researches and analytic answers as well. Indeed, the continuously changing laws about this process challenge teachers, schools’ principals, parents and students. In a nut, polices respond to the changing society by transforming the rules of the game. However, this dynamic process challenges the overall teaching/learning system. At the same time, the broader societal dimensions change day by day, aided by the fact that ICT ceaselessly develop. In this scenario, traditional pedagogical approaches are in question and being a teacher represents an open challenge. Especially, the induction process of teachers requires that we take into account several dimensions.

In conclusion, we can first say that a very interesting difference emerges when comparing the Italian results with the Finnish ones. Indeed, in our sample of Southern Italian participants in TFA course we described, the four factors

emerged through PCA have different nuances than the Finnish ones. Namely, the Finnish components were “Leadership and Management”, “Resources and Access to resources”, “Confidence and competence”, “Motivation and Time”. In the Italian context, we defined the following factors “Use of ICT technology”, “Innovative teaching and evaluation”, “Rules and digital skills” and “Educational community”. In some ways, the Finnish factor “Resources and access to resources” and the Italian one “Use of ICT and teaching” are similar. However, in the Italian sample, the use of digital tools seems to be connected with the teaching activities in a unique factor. The Finnish component “Confidence and competence” can be associated with the Italian one “Rules and digital skills”, since both of them represent the dimension about digital competences teachers have. However, the Italian factor seems to put together the way teachers perceive their own skills and the normative aspects related to the use of technology. In our view, which can furtherly be deepened, a culture mediation can influence this relation among the items exploring both digital skills and rules’ aspects. These cultural features could impact on the emerging of this factor in a double way: first, Italy (and especially Southern Italy) can probably be behind the tech distribution that Finnish schools have. This aspect can influence a socialization process of teachers about teaching technology still very much relied on technical rules and laws. Second, the Italian culture can traditionally be more normative than the Finnish one. The component “Innovative teaching and evaluation” and the component “Educational community” seem to be very much different than the other two Finnish components (“Learning and management” and “Motivation and Time”). This suggests that the role of teachers is differently perceived in the two countries, since, in Finland, the teacher is a decision maker too who organizes activities and digital tools, by taking in account the motivational dimension of her job. In Italy, it seems that the teacher’s job implies a concern about the appropriate ways to innovate the learning activities and the evaluation practices. Furthermore, the community dimension represents an aspect that makes teachers feeling the relational support in their job. These two final dimensions, in particular, can be two culturally mediated components and we do claim that this hypothesis could be furtherly explored in future studies. At the same, even if the analysis of factors is supported by statistical analysis, the final definition of them is made by the researchers. Therefore, this definition itself could be mediated by the researchers’ culture and the process of components’ label making could be analysed by looking at the Italian-Finnish intercultural procedures.

Another interesting result is about the difference between male and female teachers in the sample. That is, according to the independent t-test, on average, males have significant higher scores on Component 1, 2 and 4. By going in depth in the items of the respective factors, it seems that males are more

confident than females with the use of ICT in education. In their research on preservice teachers, Akturk *et al.* (2015) discover male participants had more positive attitudes to the use of technology in the classroom than females. Authors sustain that these last can be more diffident and less self-confident about the use of digital devices. This claim can help understanding our results as well, by underlining a cultural difference between male and female teachers. However, this aspect represents another element to be furtherly explored with future researches. Furthermore, this difference should be verified in a broader sample since, in this study, male teachers were just the 11% of the entire group of participants.

Consistently with the aim of this paper, we also run the independent t-test to analyse differences between more and less experienced in-induction teachers. Russel *et al.* (2003) found that less experienced teachers usually have higher level of comfort with ICT and use them to prepare teaching activities. Whereas, more experienced teachers use them to deliver activities in classrooms or to engage students. In our study, it emerges that there are differences between the two groups as well (more experienced teachers have, on average, higher scores on all the factors). This result suggests that can be a mediation of the experience in the way teachers perceive and use ICT for education. However, this possible idea (that should be in depth explored) unfolds further research questions, such as “What aspects of the teachers’ experience can influence this perception?”, “Does the relational dimension impact on this process?”. Far from proposing through this paper a model explaining if and how these aspects can interrelate with one another, we open these questions as further aspects to be analysed in future studies. Indeed, we think that further directions of the study can be planned. It can represent a first step of the research, since it involves a particular and not randomized sample. When we run PCA, we took just the items with significant correlations to grasp the four factors and the reliability of each factor was high enough. However, the questionnaire was not a validate scale and needs to be furtherly structured according to the Italian population, by looking at the scores of the single item as well and their possible relation with the items grasping the four factors. The high number of items for each factor can also positively impact on its reliability and subdimensions within each factor could be explored. At the same time, the Finnish sample was not composed just by induction teachers and the comparison between the two cultures cannot be generalized. However, we highlight the importance of the results emerged from this study. Indeed, we do claim that they suggest interesting aspects about the specific context we analysed and can suggest important implications for the organization of not experienced teachers’ education. For example, the specific course within which the analysis took place can be arranged through learning

activities supporting the exchange knowledge between males and females, and, especially, between experienced and not experienced teachers. At the same time, at a more general level, TFA courses can be thought as experiences where teachers develop their digital skills and try to connect them with the teaching activities in future classrooms. As for this, TFA can be the context where participants begin shaping that digital culture that will be furtherly specified in the specific contexts the teachers will work at some point and that will produce a complex system teacher-digital skills-school context-mediated activities.

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# EDUCATION FOR DIVERSITY IN INITIAL TEACHER PREPARATION PROGRAMMES: A COMPARATIVE INTERNATIONAL STUDY

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**Keywords:** Teacher education for diversity, Opportunity to learning to teach, Inclusive education, Preservice teachers' perceptions, International higher education

Despite the growing diversity in school population, many teacher educators fail incorporating diversity-related content into the courses they teach. As a result, numerous preservice teachers lack quality learning opportunities to become well versed on issues of diversity in meaningful ways. This article reports the results of an international study which explores preservice teacher perceptions of opportunity to learning to teach in diverse inclusive classrooms. A questionnaire was used to document the perceptions of a cohort of kindergarten and elementary student teachers from Spain and the US. Results indicated that strong international differences existed in the perceptions of respondents towards opportunity to learn theoretical aspects of teaching for diversity (*e.g.*, know intervention strategies to meet student diverse educational needs), opportunity to learning to teach inclusively (*e.g.*,

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learn how to develop an inclusive curriculum), and opportunity to observe and analyse practical aspects of diversity teaching (e.g., conduct diversity-related field-work), all these differences favouring US respondents. The results highlight the need for increased attention to teaching diversity in preservice teacher education programmes. Implications for ongoing development of initial teacher preparation are discussed within the context of improving educators and student teachers' training for diversity. Key words: Teacher education for diversity, opportunity to learning to teach, inclusive education, preservice teachers' perceptions, international higher education.

## 1 Introduction

Preparing teachers for diversity and inclusion is currently a global concern. Due to a number of socio-economic shifts, elementary and secondary classrooms around the world are becoming more diverse and it is expected that such diversity will increase. Acknowledgment of the changing school population demographics has resulted in a great deal of attention focused on how to best prepare preservice teachers to respond to the diverse educational needs of all students in the classrooms. Additionally, the inclusive school movement has also been an impetus for change, not only in curriculum and instruction but also in the roles of teachers and teacher educators. Current policy on inclusion (e.g., the United Nations Convention on the Rights of People with Disabilities [UN, 2006, art. 24], or the No Child Left Behind Act [NCLB, 2001]) call for highly qualified teacher educators and mandate that all learners, including those with disabilities, make adequate yearly progress. Also, in the conclusions and recommendations of the 48th session of the International Conference on Education held by UNESCO (2008), it is stated that policy makers should acknowledge the nature of inclusive education as "... an ongoing process aimed at offering quality education for all while respecting diversity and the different needs and abilities, characteristics and learning expectations of the students and communities, eliminating all forms of discrimination." (UNESCO, 2008, p. 3). Such elevated expectations have a profound impact on preservice teacher preparation internationally, which makes teacher education issues high on the educational policy agenda not only across Europe but worldwide.

In the European context, the OECD report *Teachers Matter* (Organisation for Economic Cooperation and Development, 2005) recognises that the demands on schools and teachers are becoming more complex as society now expects schools to deal effectively with different languages and student backgrounds, to be sensitive to culture and gender issues, and to promote tolerance and social cohesion to respond effectively to disadvantaged students and those with learning and behavioral difficulties. Recognising this increasing complexity, in May 2009, the European Council of Education Ministers agreed on a strategic framework for European cooperation in education and training for the period after 2010: *the Education and Training 2020 Agenda* (Council of the



European Union, 2009). In the context of this framework, the OECD Center for Educational Research and Innovation (CERI) project, *Teacher Training for Diversity* (OECD, 2010), focused on how teachers were prepared for the increasing classroom diversity, and aimed to identify the common challenges which European countries are currently experiencing in their teacher education programmes. The study resulted in no clear answers to essential questions. National responses and the priority given to diversity issues in teacher education programmes seemed to depend to a large extent on history and tradition, and they were also determined by the scale of the challenge and the perceived relevance of the topic in specific contexts. For this reason, one of the difficulties encountered in reviewing the literature is that there are different ideas regarding what counts as “diversity training” and what the intended outcomes should be.

To equip all teachers to meet the challenges connected with an increasingly diverse student population, several countries have included some diversity training in initial teacher education. However, the OECD (2010) and other studies (e.g., Severiens *et al.*, 2014) emphasise the importance of core teacher education on diversity if teachers are to be effective as teachers and all children are to achieve. The OECD particularly insists on the fact that diversity training should be part of the core pedagogical training of all teachers and should be included in all teacher training subjects at all stages of teachers’ development.

Teaching diversity has also been a consistent theme in teacher education programmes across the United States (Miller *et al.*, 2000), yet most institutions of higher education have struggled to incorporate standards for implementing diversity coursework into their certification programmes. In the case of multicultural training, Evans, Torrey, and Newton (1997) found that 82% of states require some level of multicultural or diversity training for teacher preparation programmes. However, only 37% of these states have a specific requirement as part of gaining teacher certification. Most teacher education programmes infuse multicultural and diversity education into traditional coursework. Other attempt to improve social, cultural, and linguistically responsive teacher education appealing to university faculty to integrate diversity into their courses when, in reality, many faculty in content areas do not feel they are prepared to do that, leaving courses on diversity education as electives. Thus, specific requirements for diversity training vary greatly among states, with some having more rigorous or meaningful criteria than others.

In efforts to increase teacher quality, coursework related to teaching diversity has increased over recent years; nevertheless, the impact of this increase on teacher practices has received little attention. The majority of research in this area provides programme descriptions without empirical evidence regarding long-term effects on preservice teachers and student outcomes (Booker *et al.*, 2016; Mayhew & Grunwald, 2006; Milem, 2001; Sciame-Giesecke *et al.*,

2009).

A few studies have indicated that effective diversity education courses should also provide an opportunity for a close look at the educator's own cultural biases and attitudes as it relates to the individual's culture as well as those of all the children to be encountered. Howard's (2001) seminal research looking at students' perceptions of culturally-relevant teaching indicates that students can tell if a teacher is comfortable with cultures and diversity different from his or her own. Diversity comfort is demonstrated by the amount of individualized authentic experiences educators provide students to engage them in academic content. However, there is a growing concern that teachers are not prepared or able to apply the national standards of academic excellence in an equitable manner to all students (National Council of Accreditation of Teacher Education, NCATE, 2010-2012; SMECS, 2007a; 2007b). In the US, a report from the National Center for Education Statistics (US Department of Education, 1999) found that only 20% of teachers expressed confidence in working with children from diverse backgrounds.

To understand the factors that contribute to teacher education resistance to incorporate diversity-related content into their course materials, a series of studies have investigated the effects of racial climate variables and faculty characteristics (Hurtado, 2001; Maruyama, & Moreno, 2000; Milem, 2001). Hurtado (2001) analyzed data from the 1989-1990 Faculty Survey administered by UCLA's Higher Education Research Institute of over 16,000 faculty at 159 selective predominantly White institutions across the US. Findings suggested that women were significantly more likely than men to require reading on racial/ethnic or gender issues in their courses. Additionally, African American faculty were the most likely to report having required readings on gender or race/ethnicity in their courses, while Asian American faculty were the least likely to have done so.

In another study, designed to assess university faculty views on the value of diversity on campus and in the classroom, Maruyama and Moreno (2000) administered the *Faculty Classroom Diversity Questionnaire* to a representative national sample of 1,500 college and university faculty. Results showed that the majority of faculty valued diversity in the classroom for its role in helping students to achieve the goals of a college education, and in helping faculty members to develop new perspectives on their own teaching and research. However, the majority of these faculty members also reported making no changes in their classroom practices. In fact, although faculty in this study reported being well-prepared and comfortable teaching diverse groups, only about one third of them actually raised issues of diversity in the classroom. These results differed as a function of the faculty's professional characteristics and demographics. Senior faculty members were less positive about the value

of diversity and less likely to address issues of diversity than faculty of lower Rank. Faculty of color and female faculty viewed the climate for diversity as less positive, reported the benefits of diversity as more positive, felt better prepared to deal with diversity, and were more likely to address issues of diversity than their White and male colleagues.

Milem (2001) conducted the most comprehensive study of factors that contributed to faculty's likelihood of incorporating diversity-related content in course materials. He examined how a series of demographic, professional, and perception-based factors affected faculty members' inclusion of readings on the experiences of racial and ethnic groups in the classroom. Results showed that only 14% of faculty reported incorporating diversity-related content into their courses. Overall, factors predicting curricular inclusion of diversity-related content included academic discipline, gender, race, perceived institutional commitment to diversity, and faculty interest in research and teaching. Similar to findings from studies by Hurtado (2001) and Maruyama and Moreno (2000), Milem's findings showed that faculty of color and women were more eager than men and White educators to report that they incorporate reading on racial issues in their classes.

In summary, although the issue of diversity is contained in standards for teaching (NCATE, 2010-2012; SMECS, 2007a; 2007b), in practice, it is inconsistently and often ineffectively addressed in teacher education programmes. Specific requirements for diversity preparation vary greatly among countries and within countries, with some having more rigorous or meaningful criteria than others (OECD, 2010). Clearly, institutions of higher education have had difficulty incorporating training for diversity in their teacher education programmes. While some researchers and universities claim that they are adequately educating preservice teachers for diversity (Bodur, 2010), other are not responding conveniently to the requirements of diversity issues (Ball & Tyson, 2011) with the consequence that programme graduates are entering the profession without adequate knowledge, attitudes, and skills to teach diverse students (Benton-Borghi & Chang, 2011).

The clear disconnection between teaching diversity and legislative mandates prompted us to explore the current practices of teacher educators for preparing preservice teachers for diversity at a comparative level. Because of the limited research on the effectiveness and impact of diversity training, the purpose of the current investigation was to ascertain to what extent teacher educators give opportunity to learning to teach sensitively and inclusively through the subjects they teach. For the purpose of this study, effectiveness was defined as student teachers self-perceptions on how much (*none, brief, in depth, extensive*) opportunity educators give them to develop knowledge, beliefs, and skills to become well versed to work with diverse learners. A survey methodology was

employed to address the following research questions:

1. How much opportunity student teachers have during course-work to learn diversity-related knowledge-based?
2. How much opportunity student teachers have to learning to teach inclusively?
3. How much opportunity student teachers have to observe and analyse practical aspects of diversity teaching?

The study also looked for differences in student teacher perceptions as a function of socio-cultural context.

## 2 Methodology

The study was intended as an initial investigation to shed light on what faculty members are actually teaching and doing in their classrooms to prepare student teachers to work in diverse educational settings.

### 2.1 *Participants and context*

The investigation took place in the context of two different teacher education institutions (one significantly more diverse than the other), located in Spain and in the US. The study was designed within the framework of a research project *Teacher Training for Diversity and Inclusion* led by the University of Alicante (UA), Alicante, Spain, in partnership with the College of Education and Human Development, University of Minnesota (UMN), Twin Cities.

The participants were college students enrolled in teacher education programmes at these two four-year institutions. Both institutions offer accredited teacher education programmes designed to prepare teacher candidates for K-12 setting. The UA Faculty of Education has a total student enrollment of 3,426 undergraduates (27% males and 73% females), 98% Spaniards majoring in Kindergarten, Elementary and Physical Education (UA, 2016). The UMN College of Education enrollment is of 2,437 undergraduate students (40% males and 60% females) majoring in Early Childhood, Elementary, and Special Education (UMN, 2016). According to data recorded in the Office of Institutional Research for Fall 2016, the demographic composition of UMN College of Education was 0.4% American-Indian, 13.1% Asian, 9.4% African-American, 4.8% Hispanic, 6.9% non-resident Alien, 64.7% White, 3.2% multi-ethnic, and 0.2% Unknown. This data is similar to that of the sample.

Students entering teacher education programmes at each of these universities are not required to enroll in a state-mandated course that focuses on issues relating to diversity and/or inclusive education, however, teacher education

programmes at both institutions are committed to providing teacher candidates appropriate and sufficient knowledge, abilities, and dispositions to enable them to understand, accept, and embrace diversity and equity in the learning processes, as indicated in the Conceptual Framework of Programme Plans in their respective institutional Websites.

The sample for this study was identified using the data available from the University of Alicante Office of Statistics (UA, 2016) and the University of Minnesota Office of Institutional Research (UMN, 2016). The sample included a two-stage sampling design: (1) identification of the number of potential preservice teachers in the survey; and (2) selection of respondents from each institution. Based on an analysis of the university catalogs and programme sample plans by degree, we looked for the courses in which we could survey all the cohort. In doing so, we contacted with department heads who helped in identifying the courses and facilitating instructors' contact details. All the students in the mentioned degrees of the 2016 academic year were selected and solicited for participation in the study. The total enrollment data by university included 707 student teachers at the UA and 125 at UMN. Therefore, the final sample included 832 students teachers. A total of 579 usable surveys were completed and returned, representing approximately a 70% return rate.

Table 1  
DEMOGRAPHIC DATA BY SUBSAMPLE

	UA Sample					UMN Sample				
	Min.- Max.	M	SD	f	%	Min.- Max.	M	SD	F	%
Age	22-52	22.23	3.76			19-57	23.09	5.20		
Gender										
Female				378	79.6				91	87.5
Male				94	19.8				13	12.5
NA				3	0.6				0	0
Ethnicity										
Spaniard				466	98.1					
Other				9	1.9					
African-American									3	2.9
Asian									12	11.5
European-Americ.									68	65.4
Hispanic/Latino									4	3.8
Native American/PI									17	16.3
Degree										
Early Childhood				204	42.9				8	7.7
Elementary				271	57.1				52	50.0
Special Education				0	0				44	42.3

Table 1 summarises the demographics characteristics of respondents. As can be observed, respondents were pursuing a degree on Early Childhood (25%), Elementary (54%), and Special Education (21%). The sample of the UA was composed predominantly of Spaniards (98%), whereas the one of Minnesota of European-Americans (65.4%). The distribution of the entire sample was

81.40% female and 18.60 male ( $n = 475$ , 82% from UA sample, age range of 20-52,  $M = 22.23$  and  $SD = 3.76$ ); and  $n = 104$ , 18% from UMN sample, age range of 19-57,  $M = 23.09$  and  $SD = 5.20$ ).

## 2.2 Instrument

The *Survey on Opportunity to Learning to Teach in Diverse Inclusive Settings* (SOLTiDIS) was developed by the principal researchers in 2015 and was pilot tested with a select number of experts and preservice teachers from the same participating institutions during the 2015 academic year. The pilot test included reviewer comments regarding face, content and construct validity. Adjustments were made to the instrument based on feedback from the field and results of the pilot data.

The SOLTiDIS included three sections. Section I: About this Survey; Section II: Demographics; and Section III: the *Opportunity to Learning to Teach in Diverse Inclusive Settings Rating Scale* which include 16 items which assessed along a 4-point continuum (1 = *None*, 2 = *Brief*, 3 = *In depth*, 4 = *Extensive*) the extent to which educators give opportunity for preservice teachers through their course-work to learn strategies to deal with student diversity in inclusive classrooms. Section III of the survey measure a variety of different constructs relating to diversity (e.g., intervention strategies to work on issues of diversity in meaningful ways; specific philosophical, curricular and instructional issues and practices on learning to teach inclusively; and critical reflection on expert teaching to develop practical skills. The survey instrument has been tested again with the sample of this study for internal consistency and construct validity.

Factor analyses were conducted by subsamples to investigate the factorial structure and invariance of the scale in each setting. Principal Components Analysis was used, with a Varimax rotation using the criterion of eigenvalues  $> 1.0$  and item loadings greater than .45. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and the Bartlett's Test of Sphericity were acceptable ( $p < .000$ ) for both samples. A three-factor solution with 16 items was viewed as a better representation of the SOLTiDIS scale for both cohorts. The three factors explained 61.41% of the variance (55.34% and 59.91%, Spanish and US samples, respectively). The first factor, with seven items, focused on the theoretical aspects and intervention strategies for teaching in diverse classrooms and explained 45.42% of the variance (37.98% and 37.94% Spanish and US samples, respectively); the second, with six items, related to specific issues to learning to teach inclusively and explained 9.02% of the variance (9.40% and 12.77% Spanish and US samples, respectively); lastly, the third factor (three items) measured opportunities to observe and analyse practical aspects of teaching for diversity and explained 6.97% of the variance

(7.96% and 9.19% Spanish and US samples, respectively). As a result of the factor analysis, one item was eliminated because it failed to load in any factor or loaded in multiple factors simultaneously. The factor structure was found the same for both samples with similar factor loadings in each factor, which confirm the invariant nature of the construct. In addition, the full-scale showed good internal consistency (Cronbach's alpha.917 for the whole sample, and.887 and.884, for the Spanish and US samples, respectively).

### ***2.3 Procedure***

Ethics approval in accordance with university requirements were obtained from both institutions prior the survey administration. The survey instrument was administered to several student teacher groups (in their second/third year of study) of each university cohort during class time at a time and date arranged by both researchers and instructors. Students who were present in the class on the day of survey anonymously and voluntarily completed the survey after the informed consent had been granted. Before the survey administration, information about the research project's goals and procedures was read to participants. People who did not wish to participate returned blank surveys or left the room. After completion, the surveys were returned to the researcher present in class during the survey administration. All data collected was aggregated and kept confidential.

### ***2.4 Data analysis***

We performed descriptive, exploratory, and comparative analyses using SPSS, version 22, following three steps. First, frequencies and percentages were used to report demographic data. Second, data reduction techniques (exploratory factor analysis) were used to identify the scale factor structure. Third, means, standard deviations, and inferential statistics (*t* tests for independent samples) were calculated for each item of the SOLTiDIS scale by factors to describe how the respondents perceived opportunity to learning to teach in diverse environments, and compare if their perceptions varied as a function of university context. In addition, Cohen's *d* for *t* test (independent samples) was also calculated to measure effect size. Data was segregated by institution to facilitate the analysis. All statistical analyses were computed with an *alpha* level of.05.

## **3 Results**

Results are presented structured according to the research questions addressed in this study.

### 3.1 Opportunity to learn diversity-related knowledge-based for teaching in diverse classrooms

The overall respondents perceptions of opportunity to learn diversity-related knowledge and intervention strategies to work in meaningful ways in diverse classrooms were slightly below the neutral midpoint of the scale ( $M = 2.49$ ,  $SD = 0.73$ ) (see Table 2) for Spanish respondents, and clearly above the midpoint for US respondents ( $M = 3.11$ ,  $SD = 0.83$ ). Note that the scale ranged from 1 (*None opportunity*) to 4 (*Extensive opportunity*) indicating these results that while the Spanish student teachers perceived they had *brief* opportunities during course work to learn how to work with diverse learner in inclusive environments, US respondents believed that the opportunities they had were *intensive enough* to do so. In fact, 53% of the Spanish respondents reported none/brief opportunity to learn theoretical and intervention aspects of diversity while a 81% of the US respondents rated the opportunities for them as quite extensive.

Table 2  
OPPORTUNITY TO LEARN KNOWLEDGE-BASED FOR TEACHING IN DIVERSE CLASSROOMS:  
DESCRIPTIVES, FREQUENCIES, AND COMPARISON OF MEANS BY SUBSAMPLE

	M/SD	UA Sample				M/SD	UMN Sample				t	p
		NO	BR	ID	EX		NO	BR	ID	EX		
1. Know intervention strategies to meet student diverse educational needs.	2.6/0.7	2	45	45	8	3.2/0.7	0	13	54	33	-8.3	.000
2. Propose appropriate intervention strategies.	2.4/0.7	6	54	36	4	3.1/0.8	3	17	47	33	-9.6	.000
3. Acquire knowledge and use strategies to motivate students.	2.7/0.8	4	40	41	15	3.3/0.7	0	15	45	41	-7.2	.000
4. Know/manage analysis and behavior modification strategies.	2.7/0.8	4	37	45	13	3.2/0.7	1	14	53	32	-6.6	.000
5. Develop skills to collaborate with parents/professionals.	2.2/0.8	16	54	25	5	2.9/0.8	4	24	46	26	-9.0	.000
6. Gain a better understanding of schools, classrooms, and students' diverse needs.	2.4/0.8	12	46	33	4	3.2/0.8	3	15	46	36	-8.8	.000
7. Identify specific educational needs and make appropriate referrals.	2.5/0.7	5	41	48	6	2.9/0.8	4	22	51	23	-5.2	.000
<i>Total average</i>	2.5/0.7	7	16	39	8	3.1/0.83	2	17	49	32		

All responses are on a scale of 1 to 4. The anchors are 1 = *None*; 2 = *Brief*; 3 = *In depth*; 4 = *Extensive Opportunity*

Table 2 also shows respondents' scores on individual items. Spanish respondents reported that they had more opportunities to learn knowledge to manage behavior modification strategies ( $M = 2.66$ ,  $SD = 0.76$ ) or acquire techniques to motivate students ( $M = 2.65$ ,  $SD = 0.78$ ) than for developing



skills to collaborate with parents and professionals ( $M = 2.19$ ,  $SD = 0.76$ ). On the other hand, although US respondents indicated that their opportunities for learning knowledge on diversity were clearly sufficient in all aspects considered, they reported having had less opportunity for developing skills to collaborate with parents and professionals ( $M = 2.95$ ,  $SD = 0.81$ ) and for identifying specific learner educational needs and make appropriate referrals ( $M = 2.94$ ,  $SD = 0.78$ ) than for motivating students ( $M = 3.26$ ,  $SD = 0.70$ ) or learning intervention strategies to meet students' diverse educational needs ( $M = 3.21$ ,  $SD = 0.65$ ).

Comparisons of average ratings on knowledge-based on diversity by country revealed statistically significant differences in opportunities to learn this kind of knowledge between Spanish and US respondents at.001 (see Table 2). US respondents perceived that they had significantly more opportunities to learn diversity-related knowledge than did the Spanish preservice teacher participants, differences that can be considered strong (average Cohen's  $d$  effect size of.793).

### ***3.2 Opportunity to learning to teach inclusively***

Survey participants' ratings of the opportunities to learning to teach inclusively are presented in Table 3. Again, Spanish respondents had more neutral ratings (around the midpoint of the scale which is 2.50) in all the six items that measure opportunity to learning to teach inclusively ( $M = 2.59$ ,  $SD = 0.78$ ) than US respondents ( $M = 3.11$ ,  $SD = 0.75$ ). Particularly, Spanish student teachers tended to agree that they had below average opportunities to design and learn how to develop an inclusive curriculum ( $M = 2.35$ ,  $SD = 0.70$ ), while US respondents perceived slightly above the neutral midpoint the opportunity for analysing and discussing educational laws and policies with regard diversity and inclusion ( $M = 2.83$ ,  $SD = 0.82$ ). The opportunity to learning the other skills of this domain was rated by US respondents as sufficiently intensive. Note that only a half of the Spanish respondents (54%) rated the opportunity to learning to teach inclusively as *in depth* or *extensive* while the vast majority (80%) of the US counterparts did so. In all cases, Spanish respondents rated significantly lower the opportunity to learning to teach inclusively than did US respondents ( $p < .01$ ), with strong effect sizes for Items 8, 9, 10 (average Cohen's  $d$  effect size of.946), and medium or small for Items 11, 12, and 13, respectively (average Cohen's  $d$  effect size of.470).

Table 3  
OPPORTUNITY LEARNING TO TEACH INCLUSIVELY: DESCRIPTIVES, FREQUENCIES, AND  
COMPARISON OF MEANS BY SUBSAMPLES

	M/SD	UA Sample				M/SD	UMN Sample				t	p
		NO	BR	ID	EX		NO	BR	ID	EX		
8. Design and learn how to develop an inclusive curriculum.	2.4/0.7	8	53	34	5	3.0/0.7	3	18	54	25	-8.3	.000
9. Encourage participation of all students.	2.8/0.8	4	26	53	17	3.5/0.6	0	5	42	53	-8.3	.000
10. Adapt curriculum and teaching.	2.5/0.7	5	44	44	7	3.2/0.8	3	12	46	39	-8.7	.000
11. Assess authentic learning.	2.7/0.7	2	37	53	8	3.0/0.8	3	22	49	26	-4.3	.000
12. Analyse and discuss educational laws and policies on diversity and inclusion.	2.6/1.1	6	45	41	8	2.8/0.8	5	28	45	22	-2.4	.017
13. Review/discuss issues of quality, justice, equal opport.	2.6/0.8	6	38	46	10	3.1/0.8	3	18	43	36	-6.4	.000
Total average	2.6/0.8	5	41	45	9	3.1/0.8	3	17	47	33		

All responses are on a scale of 1 to 4. The anchors are 1 = *None*; 2 = *Brief*; 3 = *In depth*; 4 = *Extensive Opportunity*

### 3.3 Opportunity to observe and analyse practical aspects of teaching diversity

The Spanish and US student teachers' overall perception of opportunity to analyse expert teaching and develop practical skills in regards to diversity was brief or at low level ( $M = 2.28$  and  $M = 2.84$ , respectively). The respondents' average ratings on this domain varied significantly across the three items (see Table 4). Respondents' perceptions of opportunity for conducting field-work focused on diversity ( $p < .01$ ), observing and analysing expert teachers' performance ( $p < .05$ ), and observing and analysing examples of good practices ( $p < .01$ ) were significantly lower for Spanish preservice teacher respondents than for the US respondents.

As can be observed in Table 4, 63% of Spanish respondents vs. 29% of the US respondents reported none or brief opportunities to conduct field-work during their training period; almost half of the subsamples (42% vs. 41%) indicated lower opportunities to analyse expert teachers' performance, and 36% vs. 71% of the Spanish and US respondents, respectively, considered that the opportunities they had to analyse examples of good practice with regards to diversity and inclusion were quite extensive.

Comparison of item ratings in this domain revealed again that student teachers from Spain rated the opportunity to observe and analyse the practical aspects of teaching for diversity significantly lower than their counterparts in the US (Cohen's  $d$  ranged in this domain from .243 to .775, small for Item 15 and strong for Items 14 and 16).

This has been a consistent trend throughout the analysis of responses to each of the scale's subfactors.

Table 4  
OPPORTUNITY TO OBSERVE AND ANALYSE PRACTICAL ASPECTS OF TEACHING FOR DIVERSITY:  
DESCRIPTIVES, FREQUENCIES, AND COMPARISON OF MEANS BY SUBSAMPLES

		M/SD	UA Sample				M/SD	UMN Sample				T	p
			NO	BR	ID	EX		NO	BR	ID	EX		
14.	Conduct diversity-related field-work.	2.2/0.9	23	40	30	7	2.9/1.1	17	12	33	38	-6.2	.000
15.	Observe and analyse expert teachers' performance.	2.5/0.9	16	36	32	16	2.7/0.9	12	29	36	23	-2.3	.023
16.	Observe and analyse diversity-related examples of good practices.	2.2/0.9	22	42	29	7	2.9/0.9	10	19	44	27	-6.3	.000
<i>Total average</i>		<b>2.3/0.9</b>	20	40	30	10	<b>2.8/1.0</b>	13	20	38	29		

All responses are on a scale of 1 to 4. The anchors are 1 = *None*; 2 = *Brief*; 3 = *In depth*; 4 = *Extensive Opportunity*

## Discussion and conclusion

Our main goal was to explore student teachers' perceptions of opportunity to learning to teach in diverse inclusive classrooms. Initially, a factor analysis was undertaken which revealed three domains of the construct: (1) Opportunity to learn theoretical aspects and knowledge-based for teaching in diverse settings; (2) Opportunity to learning to teach inclusively; and (3) Opportunity to observe and analyse practical aspects of sensitive teaching for diversity. These three domains are in line with the key areas of any process of instruction that emphasises learning to teach in effective and meaningful ways, in this case, for diversity.

Our results showed evidence of strong international differences in student teachers' perceptions of opportunity to learning to teach in diverse inclusive settings, with preservice teachers in Spain consistently reporting lower perceptions of opportunity than did their counterparts in the US. In terms of perceptions of opportunity to learn knowledge-based for teaching in diverse settings, the US student teachers reported significantly higher ratings of opportunity than Spaniards. These differences are, however, perplexing but comprehensible. In a previous study conducted under similar conditions, Cardona-Moltó (2017) compared the institutional sensitivity on diversity and its impact on teaching of preservice teachers from the same two colleges of education participating in this study and found that although 49% vs. 96% (Spanish and US preservice teachers) agreed that their college of education welcomes diversity only a third of the Spanish respondents believed that university departments are really compromise to diversity (35% vs. 80%). Moreover, only one-third and one-quarter (UA and UMN samples, respectively)

agreed/strongly agreed that their instructors did not change the way they teach to integrate diversity in their courses. This findings further support that of Maruyama and Moreno (2000) study who explored university faculty views from the US on the value of diversity and found that the majority of participants valued this aspect of the human differences as positive, but reported making no changes in their classroom practices.

With respect to opportunity to learning to teach inclusively and opportunity to observe and analyse the practical aspects of good teaching for diversity, ratings were considered low in the Spanish sample compared to the US sample. These results support previous studies conducted in Spain and the US (*e.g.*, Cardona-Moltó *et al.*, 2017; Mayhew & Grunwald, 2006), which identified a lack of programme coherence with the standard of diversity, as well as a lack of instructors' compromise on integrating diversity content into teaching. The findings of another study conducted in the US on factors contributing to faculty incorporation of diversity-related course content (Mayhew & Grunwald, 2006) are congruent with the notion that many US faculty members still do not integrate diversity-related materials into their course content, fact that contribute to understand why student teachers report to have little opportunity to learning to teach in diverse settings.

Possible explanations for the identified differences in perceptions of opportunity to learning to teach in diverse settings of Spanish and US respondents in this study refer to socio-cultural factors and experience with diversity. The UA and UMN samples differ in socio-cultural context, one is European and the other North-American. In addition, the UMN has a stronger tradition of diversity than the UA that only recently has began to experienced it. But possible explanations of the results should not refer only to cultural or contextual variables. The findings of this study clearly shows that when it comes to teaching diversity, differences may well be much more subtle than the mentioned, and that the prevailing cultural context in each individual country, region, state, or institution might prove to be a better context in which to frame the results. Therefore, caution needs to be taken when making assumptions about cultural context as an explanation for research findings in this area.

The data reveal potential areas of need concerning articulation of diversity and inclusion previously identified in the literature (*e.g.*, Darling-Hammond, 2017; Sciamé-Giesecke *et al.*, 2009) The findings clearly show that there is a need to (a) increase the coherence of study plans with the standard of diversity, (b) coordinate course requirements on the mandates of diversity and inclusion, (c) provide more faculty awareness of diverse learners, and (d) offer real opportunities for faculty practical teaming experiences and innovation on how to integrate diversity-related course content into their teaching. Also the findings reported here bridge the gap between past research concerning teacher

training and current challenges articulated in UN (2006), OECD (2010), and country mandates on standards on diversity.

This research is not exempt from limitations. The study was carried out at only two predominantly White TE institutions, being the samples one significantly lower than the other, so the findings may not generalize to other teacher education environments and/or student teachers samples. Also, survey data are self-report in nature, so future studies should implement an observational component to see if what students claim is happening or occurring in the classroom setting. Asking faculty to allow for observations of course sessions could provide an additional layer of information from which administrators can plan for future diversity programming (Sciame-Giesecke *et al.*, 2009).

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# DESIGNING AN EFFECTIVE AND SCIENTIFICALLY GROUNDED E-LEARNING ENVIRONMENT FOR INITIAL TEACHER EDUCATION: THE ITALIAN UNIVERSITY LINE MODEL

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**Keywords:** Andragogy, Heutagogy, Self-determined learning, Connectivism, Connessionism, Gamification.

Online didactics for adults has to meet the needs of an audience with peculiar constraints and goals. In particular, within a constructivist and connectionist perspective, it has to ensure the right balance between autonomy and socialization, while stimulating reflection upon experience and generating further meaningful experiences.

In this contribution we present the educational model of the Italian University Line as an example of online didactics meeting the above defined requirements, also in the case of ITE – Initial Teacher Education.

Finally, we present an ongoing experimentation of gamification, aiming at enhancing engagement and motivation.

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## 1 Introduction

Over the last few decades, the world has changed almost unrecognisably, and this has had a big impact on people's lives and careers. Nowadays, in a world that is more global, when technologies are rapidly changing, and dynamic new generations are constantly progressing, even five years is a long time in a single job. More importantly, the typical "static" professional, who built his/her knowledge once for all, does not exist anymore. Everyone needs to continuously update their skillset in order to keep up with change and transformation. That's why we talk about lifelong learning, at least since Delors' (1996) definition of the four 'pillars' of education for the future.

Lifelong learning is therefore a common concern, especially for the teachers who have simultaneously to face up to technology evolution, knowledge growth and the new generations.

Teachers are therefore peculiar lifelong learners: they are at the forefront in facing change and ever-changing needs, coming from society and the labour market, and they consequently have to be able to innovate and adapt to different students and contexts.

Constant learning is therefore a priority for them, also because they are reflective practitioners (Schön, 1983), whose practice involves a willingness to actively participate in a perpetual growing process, requiring ongoing critical reflection on both classroom practices and core beliefs (Larrivee, 2008). Furthermore, their daily confrontation with the class acts as a continuous assessment of their work, opening spaces for critical thinking and improvement.

If, on one hand, learning is a never-ending process, on the other hand, there are some phases that are more critical and strategic than others.

For teachers, "initial education is the first crucial stage in a teacher's professional journey. It lays the foundations of a professional mindset and provides the new teacher with a basic toolbox to make meaningful learning happen in the classroom" (ET2020 Working Group on School Policy, 2014).

They need an effective and scientifically well-grounded learning environment. "Scientifically grounded" means that the learning offered complies not only with the principles of andragogy (Knowles, 1975) but goes even beyond, leaving the right space to self-determination and adopting a heutagogical approach. Heutagogy was defined by Hase and Kenyon in 2000 as the study of self-determined learning. It applies a holistic approach to developing learner capabilities, with learning as an active and proactive process, and learners serving as "the major agent in their own learning, which occurs as a result of personal experiences" (Hase & Kenyon, 2007: 112). Heutagogy is of special interest to distance education: specifically, heutagogy "has the potential to become a theory of distance education, in part due to

the ways in which heutagogy further extends the andragogical approach and also due to the affordances it offers when applied to emerging technologies in distance education” (Blaschke, 2012).

Within this scenario, the purpose of this article is two-fold: firstly, it presents the online IUL (Italian University Line - [www.iuline.it](http://www.iuline.it)) educational model, as the ideal model for teacher education and initial education in particular; secondly, it offers insights into possible developments, especially in the direction of gamification as a strategic way to support learners’ motivation and engagement.

## 2 Social constructivism and online interaction

The debate on how to implement social constructivism (Vygotsky 1978) in e-learning is not new. It has developed in parallel with the growth of online learning environments, mainly for academic use. “The problem is how to interpret the socio-cultural paradigm and how to update it. All too often, the wrong instructional design of the learning environment produces operating procedures which are theoretically stigmatised and the technology in use is blamed for the rigidity of the structure, without focusing on inadequate planning” (Rossi, 2006: 77, transl. by the author).

Before describing how the model can put into practice the constructivist principles, we wish to illustrate how to determine if an online environment satisfies its fundamental principles. The model of “Community of Inquiry”<sup>1</sup> developed already in 2000 by Garrison, Anderson and Archer is made up of three key elements which should be included in every online learning environment, based on the constructivist and constructionist models. These elements are: the cognitive element, the social element and the teaching element.

The cognitive element is at the core of the online learning environment and is made up of the learning contents.

The teaching element, also in the function of facilitator, is necessary to guide and direct learning. One of its main characteristics is versatility and the ability to adapt to students’ needs.

According to Mbatl (2012), who reviewed the main contributions to this debate in the last two decades, an online learner should not only be provided with chances for socialisation, by the environment, but he/she should also make efforts in order to be perceived as a “real” social

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<sup>1</sup> The concept of community of enquiry was introduced long time ago (end of 1800) by the pragmatic philosophers Peirce e Dewey, but here refers to the application of this concept in online environments.

presence. Garrison *et al.* (2000: 94) already mentioned, and also Peterson and Caverly (2005: 38), define the social presence as the ability of the learner “to project themselves socially and emotionally, as real people (i.e. their full personality), through the medium of communication being used” (Mbat, 2012, 103).

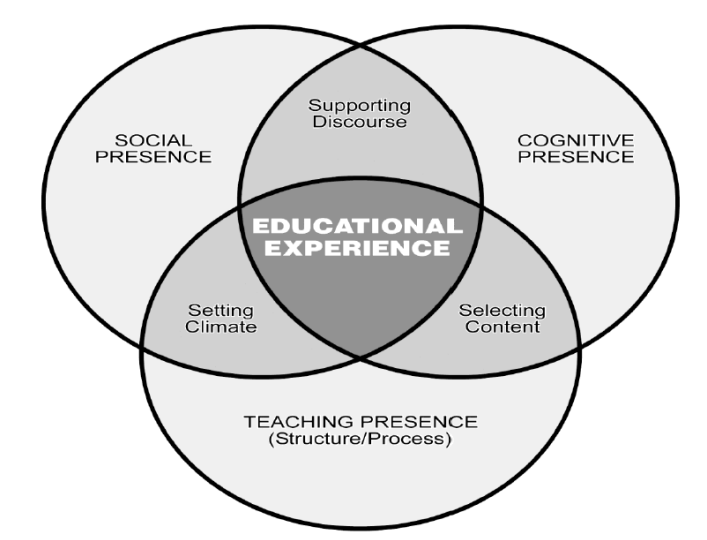


Fig. 1 - Model of community inquiry adapted by Garrison, Anderson and Archer (2000)

This implies that the online learner holds the capacity to socialise in the new environment. Some scholars, Mbat (2012) emphasises, consider this a relevant problem because the lack of this capacity “may lead to learner frustration, anxiety and, ultimately, failure with online learning” (Kehrwald, 2008: 97). However, as far as this aspect is concerned, direct action cannot be taken. What can be done is to provide the learner with adequate opportunities to express his/her social presence.

We are therefore going to describe the model starting from the general setting of the environment and dividing it into three main functional areas: welcome area, didactic area (campus) and library.

The welcome area is designed to welcome the student and help him/her in the quest for information. The sections must be organised with a user friendly approach enabling easy and intuitive access to contents.

## 3 The educational model

### 3.1 *The environment*

#### 3.1.1 *Welcome area*

The portal is structured to facilitate the access to practical information. A drop-down menu lead to the presentation of the university, the educational provision, the student service office, contacts and press office. The news section provides updates and developments of the courses. Additional materials, such as activities prepared by the teachers or the students' final thesis, the profiles of the staff and the ex-students' success stories are accessible by registering as a guest and obtaining a profile where the student service office can send information regarding the courses activated and events of the University. Registered users can, in this way, visit some of the online environments as guests, in order to gain an insight into the contents and the organisation of the university. Upon enrolment, students can access the didactic area.

#### 3.1.2 *The didactic area – the Campus*

The campus is the place where students attend lessons, access the library, interact with the student service office, create groups of study or study individually. In the orientation area, the student can interact with the student service office, disciplinary and path tutors, consult the guidelines, watch tutorials for the navigation of the online environment and report any disservice.

The areas of the university dedicated to socialisation and study are: the library, the scriptorium, the lecture hall, the students' rooms and non-moderated forums for discussion. The lecture hall and the students' room allow synchronous group web conferencing. The university is therefore organised to favour personalisation of the training pathway, socialisation of the learning experience and co-production of knowledge. The student's personal profile keeps record of the activities carried out during the course and also of individual study, materials consulted and the reports produced. This is not only an automatic digital diary, useful to trace student's development, but also a useful support for the personalisation of the learning experience.

#### 3.1.3 *The Library*

The library is conceived as a study environment and at the same time as a place for the production of knowledge. All the texts found in the library can be annotated, commented, edited and correlated to other documents, so that a new version of them can be created at any time. Thanks to the editing, traceability and reading feedback functions of the scriptorium, the texts become real places

of interaction. This area is used for the editing and production of contents and associates a text editor with tools for creating maps, for annotating images, for creating tests and surveys and other applications for creating multimedia content. All teachers and students have the opportunity to create their own work-study space by inserting the texts, useful to their study, in a dedicated “shelf”. The shelf is a private space for the elaboration of the work in progress or for the reflection on the texts chosen, through all the tools made available by the synergic use of the library and the scriptorium. It is also a place to share one’s work with the rest of the University. The option to insert a text (chosen among those available or personally created) in the public or private part of the shelf responds to the principle of co-construction of knowledge, as it allows individual reflection and sharing, comparison and growth, through the interaction with the rest of the community.

### *3.2 Key Figures/functions*

The model we are describing is a digital learning environment for tertiary education. In this virtual environment, organised in the function areas described above, some Key Figures/functions operate: the student, the teacher and the tutor.

The central role of the student within the teaching-learning process is a key assumption of the constructivist approach. It must be considered that students are adults and each of them has different needs, therefore it isn’t easy to develop personalised curricula tailored for each of them.

However, the technological infrastructure can provide the tools to collect all the relevant information about the student and develop his / her profile, in order to identify his/her training needs. This activity is strategic, in general, to implement the principle of personalisation of learning, and, in particular, during the orientation process. In this perspective, the technological infrastructure allows to collect and organise the data about the student, elaborating a personal profile in order to lay out the individual training agreement.

#### *3.2.1 The Student*

The student is at the core of the learning experience. This aim is achieved through a personalised path and through a continuous and active dialogue with all the other actors involved in the process (teachers, tutors, university staff, etc.) and with the other students. For this reason, gathering information on the student’s profile and tracing the activities he/she has carried out, make it possible to have a complete picture of his/her training needs and of the results achieved. The digital profile of the student provides, in addition to his/her

personal data, information on the materials consulted and produced, and the type of presence in the environment. This information and the user status are functional to the communication on the platform and can be managed by the user. A similar function is that of the notice board, a virtual area where it is possible to insert and share information or reports of common interest.

The problem of the possible isolation of the “inhabitants” of the online environment can be solved, as well as with the arrangement of spaces and functions for virtual socialisation, with the organisation of in person meetings. These meetings can have various functions: from knowing each other and socialise, to peer support and preparation of exams together. The notice board and the status are the basic elements showing the presence of the student in the environment and can be made visible to the users connected with the student (classmates), to the teachers, to the course colleagues or to the whole community of users. The presence in the environment is essential for starting conversations in the online environment.

The training diary is used to lay down the training agreement and to set the base for a path of reflection in view of the thesis project. The diary is based on a personal blog to be compiled periodically by the students guided by the tutors and the teachers. The blog is designed to be accessible to teachers and path tutors, strategic figures for the definition of individualised paths. Students must decide whether to make the posts public to other users of the platform.

As a further tool for customising the course, the portfolio reports the students’ assessment results achieved in the tests and in the course and lessons activities. The class performance statistics can also be accessed from the portfolio: this information can be useful for self-assessment. The portfolio contains the diary of online activities, where each student can check his/her situation regarding the actions tracked by the system (downloaded materials, reports sent at the conclusion of self-learning activities, participation in synchronous events, interventions in class forums, categorised by author, form, sub-form and date).

In accordance with the constructivist approach, the teacher, the tutor and the path tutor stimulate and orientate the student, contributing to create the “favourable contexts” mentioned by Wenger: “Education doesn’t make learning happen, it creates the context where learning happens, as it does in other contexts” (Wenger, 2006: 266).

The path tutor’s figure might be less clear of that of the teaching tutor. This is a multifunctional figure combining teaching and administrative functions. The path tutor has, in fact, a connection function between the teaching and the administrative systems, the infrastructure and the outside world. As far as this last aspect is concerned, the path tutor creates, together with the student, the connection with the outside world, that is, the world of work and other training opportunities. This is achieved through orientation, skills assessment, problem

based learning or reworking. The path tutor, being a supporter and a facilitator, becomes the student's coach and face to face meetings can also be scheduled.

### *3.2.2 The Teacher*

The teacher provides a theoretical framework for teaching, in agreement with the tutor, and organises some synchronous events (recorded video lessons or synchronous lessons). The teacher's task is to produce study materials for online use, to indicate possible recommended readings and reference bibliographies, to prepare midcourse tests, together with the tutor, to participate in the exams and to communicate the results to the student service office.

### *3.2.3 The Teaching Tutor*

The teaching tutor is a central figure who possess disciplinary, communicative and organisational skills. The tutor supports the teacher, taking care of the organisation and development of teaching activities. The tutor takes care of the design and planning of teaching activities and publishes in a dedicated space the initial studying materials, in accordance with the educational objectives set by the teacher.

The teaching tutor, using the communication tools made available by the environment (chat, forum, synchronous activities), provides the students with the guidelines of the course, offers food for thought, animates the online debate and clarifies perplexities. In this sense, the tutor is a reference figure for the management of the training-communication process. In particular, as regards the asynchronous activity, the tutor initiates, stimulates and moderates the exchange between students on the teaching content, making available, when appropriate, additional resources based on the students' requests for personalisation of the module. In this sense, his/her task is also to report these requests and any other significant element to the teacher, so that the path of personalisation is properly structured and deepened.

### *3.2.4 The Path Tutor*

The path tutor is a methodologist, in some cases, replacing the teaching tutor, other times collaborating with him/her. The path tutor introduces the students to the online environment during a dedicated module and along the entire educational path. He/she facilitates the interaction between the students and the learning/communicative environment. Therefore, the path tutor possesses strong knowledge of the online learning environment and learning methods. He/she liaises with the student service office, the data centre and with teaching tutors for whom he/she also manages and addresses students' questions



and information requests. Moreover, the path tutor takes care of guest users through the mailing lists and student forums, and analyses, with the student service office, the personal data provided by the students in order to trace the students' profiles.

### 3.3 The Didactic area

This section describes the organisation and the functioning of the didactic area of the didactic model we have proposed. In particular, we are taking into account the educational path of A.Y. 2017-2018 issuing 24 ECTS in Anthropo-Psychological disciplines and methods and technologies for didactics, which according to the present Italian regulation are access requirements to sit the public exam to qualify as upper and secondary school teachers (art. 5 legislative decree n.59 of 13 April 2017). Therefore, this course is a brief course for teachers' initial training.

Table 1  
STRUCTURE OF THE IUL 24 ECTS CREDITS COURSE

Subject		SDS	ETCS	Delivery mode
Subject 1	E-learning and pedagogy 2.0	E-PED/04 Experimental pedagogy	6	online
Subject 2	Psychology of development thinking and creativity	M-PSI/04 - psychology of learning	6	in person
Subject 3	Ethical responsibilities of the teacher	M-FIL/03 - Moral philosophy	6	online
Subject 4	Techniques and technologies for school learning	M-PED/03 - Didactics and special pedagogy	6	in person
TOTAL ECTS			24	

The orientation phase of the course includes welcoming and orientation of students. Using Lowen's metaphor (1994) we could call it the "grounding phase", that is, settling in the environment in order to be able to explore it and make the most of all the educational opportunities it offers. During this phase, after orientation and self-assessment, the student and the tutor lay out the educational agreement. In the case of the 24 ECTS course, the orientation is reduced, due to the brief duration of the course (three months), but it still holds a key function.

#### 3.3.1 Orientation

The orientation phase accompanies the first steps of the student in

the online environment, which welcomes him/her offering a series of services. The aim is to allow the student to familiarise with the environment and the tools, get to know the educational model, the course organisation and the functioning of the online community. Familiarising with the environment means also getting to know the aims of the courses and verify possession of the requirements. Whenever the student lacks core competences or knowledge, these can be acquired in this phase by laying out with the tutor a personalised study path to be completed before the beginning of the course.

After the initial settling in phase, the student possess the instruments to go on along his/her learning path. However, the online environment is a particular one: it is more difficult to interpret and experience but also more full of stimulations and opportunities. It is a highly permeable learning environment because it interacts with the non-digital one, enhancing its possibilities. In this regard, it is a breaking point for the milestones of the pedagogical and andragogical settings, also for advanced ones, such as the constructivist. In fact, on one hand, it redefines the borders of social interaction, pushing the inhabitants of digital environments towards new types of socialisation. On the other hand, it makes visible the epistemological status of technology: extreme fragmentation of knowledge and its distribution in small and big packs of data, dots or knots of the network.

In a time when knowledge is growing exponentially and is not owned by just a few individuals, learning has drastically changed. In the connectivist perspective, learning is a no-linear process dominated by chaos, complexity and self-organisation. Among the core principles of the connectivist approach (Siemens, 2004) there are beliefs such as: “Capacity to know more is more critical than what is currently known”; “Nurturing and maintaining connections is needed to facilitate continual learning”; and “The ability to see connections between fields, ideas, and concepts is a core skill”.

The environment we envisage is a balanced combination of traditional and innovative elements enabled by “digitality”. Therefore, in the digital environment not only the course contents can be learnt and qualifications achieved, but also higher and more complex functions - defined by connectivism as crucial for the citizen living in an hybrid world where the border between digital and non-digital is becoming increasingly thin - can be exerted. In particular, what is at stake is the ability to learn, which the EU Commission has included among the key competences of lifelong learning. Thus, the student is fully equipped to learn all hi/she

needs, in an active and innovative way. The student is responsible for making the most of the resources at disposal. He/she must be willing to make use of these resources, and it is significant that in the connectivist perspective this is not a minor step: decision-making is in itself a learning process. Choosing what to learn and the meaning of incoming information is seen through the lens of a shifting reality. While there is a right answer now, it may be wrong tomorrow due to alterations in the information climate affecting the decision. For this reason, Heutagogy can be described as “progression from pedagogy to andragogy to self-regulation, with learners likewise progressing in maturity and autonomy” (Canning, 2010).

### Conclusions: the quest-based experimentation

So far, we have described the IUL structural and organizational model, and provided a concrete example of ITE – Initial Teacher Education. The first edition of the course, which is a short special-purpose pathway, wasn't provided with tools to measure the impact on learners. However, in the next edition of the course we intend to provide evaluation tools.

Nevertheless, our 24 ECTS course has been attended by 120 people and has been truly appreciated as it was shown by spontaneous feedbacks (i.e. emails to tutors and teachers, contributions to the fora, informal face-to-face interactions with tutors and teachers). An indirect quantitative indicator of appreciation was the fact that, after the completion of the 24 ECTS course, more than half the participants (70 people) enrolled in one of the two I level professional master programmes available in the same disciplines: “Education & Training: Pedagogy 2.0” and Didactic, anthropological, psycho-pedagogical methods and economical-legal aspects”.

We have highlighted how the IUL educational model meets the apparently conflicting needs of socialisation and autonomy of an adult and busy audience, by offering an andragogical and heutagogical approach. Therefore, in a nutshell, taking up the proposal of Caner 2012, and assuming heutagogy as the evolution of andragogy (Canning, 2010), we could call it an e-heutagogical model.

We finally outline the ongoing improvement process, aiming at having a positive impact on a key factor of adult education: motivation. This is a gamification process (Uhr *et al.*, 2015) focused on the quest mechanism, consisting of searching for (learning) objects such as key terms, images or schemes, following the instructions of a “superior” (the path tutor) and solving problems (riddles, enigmas) based on learning contents.

The guiding principle is the Incremental Progression (Oxford Analytica, 2016, Kapp, 2013), i.e. the notion of Proximal Development Zone applied to gamified e-learning.

Building on the encouragement of incremental progression, the quest incorporates badges as visible symbols of achievement, also providing more intermediate goals and thus keeping the interest high. Badges enrich the learner's portfolio and are part of assessment.

With this experimentation, we aim at improving the quality of our educational offer, by providing highly engaging, relevant e-learning environments, where socialisation and autonomy are both fully ensured and the key principles of ITE, according to the latest EU Commission guidelines, are fully respected. In particular, the inquiry-based approach we are currently developing within the gamification process is in compliance with ITE: "3. Teachers should be able to develop and maintain a mind-set and a practical approach which are based on reflection and inquiry, and focused on ongoing professional development".

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# PROMOTING DIGITAL AND MEDIA COMPETENCES OF PRE- AND IN-SERVICE TEACHERS. RESEARCH FINDINGS OF A PROJECT FROM SIX EUROPEAN COUNTRIES

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This paper presents the results of e-MEL, a European project aiming at promoting the development, implementation and testing of training scenarios for pre- and in-service teachers' training in the field of digital and media literacy education. The analysis of the results led the research team to identify the critical and successful aspects of the testing, and to draw some recommendations for the future implementation of teacher training interventions. The final goal is to reflect on sustainable models of media and digital skills training both in terms of teacher education and teachers' professional development.

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## 1 Introduction

Over the last 10 years, there has been an increasing interest from international bodies in elaborating comprehensive frameworks of digital and media literacy for teachers. One of the most relevant models for media and digital literacy is the Media and Information Literacy (MIL) Curriculum and Competency framework developed by UNESCO in 2011 with the aim of providing teacher education systems with “a framework to construct a program for turning out teachers who are media and information literate” (UNESCO, 2011, p. 19). The framework includes three key interrelated thematic areas that are: 1. Knowledge and understanding of media and information for democratic discourses and social participation; 2. Evaluation of media texts and information sources. 3. Production and use of media and information. These areas are, in turn, connected to six key dimension related to general education and teacher development, policies to promote MIL in education, curriculum design and assessment, pedagogical approach to teaching MIL, capacity to use media and information to reach different audiences, organisation and administration, and finally teachers’ professional development.

Another important model was elaborated by the European Union with a narrower focus on digital literacy/competence: the Digital Competence Framework for Educators (DigCompEdu) (Redecker & Punie, 2017; see also Ferrari, 2012), which focuses on using digital tools for data management, collaboration and sharing of innovative teaching practices; selecting or creating digital resources; designing digital learning; developing new assessment strategies through ICT; empowering special needs students with technologies; and promoting learners’ digital competence.

While the models for defining digital and media literacy multiply, there is a total mismatch between the digital challenges that teachers have to face in their profession and their preparation both at academic level (Fernández-Cruz & Fernández-Díaz, 2016; Gudmundsdottir *et al.*, 2014; Lund *et al.*, 2014) and for professional development (Cortina-Perez *et al.*, 2014; Gonzalez Fernandez *et al.*, 2015; Spires & Bartlett, 2012; Soldatova & Shlyapnikov, 2015).

In this context, this paper presents and discusses the results of the project e-Media Education Lab (e-MEL, <http://e-mediaeducationlab.eu>, 2014-17), a European initiative funded by the Erasmus Plus programme and involving six countries (Belgium, Finland, France, England, Italy and Portugal) in the design and testing of educational resources for pre- and in-service teacher training in the area of media literacy education<sup>1</sup>. The e-MEL project was

<sup>1</sup> Data providing the ground for the elaboration here presented are fully documented in the following national reports: Bevort E., Schweitzer E. (2016a), News media education as a citizenship challenge. Report on the e-Lab experimentation, Paris, Canopé-CLEMI; Bevort E., Schweitzer E. (2016b), Images of sciences in the media. Report on the e-Lab experimentation,



aimed at bridging the numerous gaps which still exist in the field of digital and media literacy education in terms of teacher training. Focusing on media literacy and competences, the e-MEL research team developed a framework for media literacy based on three main axes (Verniers & Tilleul, 2014): 1. Informational Axis, which includes critical understanding of contents, analysis of language and representation, analysis of media formats; 2. Technical Axis, which refers to the capacity to understand the techniques which are behind the media and technologies, the technical knowledge of how media work, and the understanding of interfaces; 3. Social Axis, which entails the capacity to understand media production and reception context, and the role of media in society. Each competence was referred to either media analysis or media production. In addition, specific competences of media literacy education were explicated including the capacity to integrate media literacy into the national curriculum, to innovate pedagogical practices, to design, manage and evaluate media education projects in the classroom. This framework provided the basis to develop different training scenarios and test them with pre- and in-service teachers in different countries.

In the following we first present the context of the research project, the methods and results. Then we draw some recommendations for future developments in the field.

## 2 Research

### 2.1 Context and Aims

The e-MEL project (2014-17) was funded by the European Commission within the framework of the Erasmus Plus Programme, KA 2 – Cooperation in innovation and exchange of good practices. It aimed at bridging the gap between the emerging need for teachers' preparation on digital and media literacy and the messy reality of training in this field by designing, delivering and experimenting training resources for the professional development of teachers to be published online as open educational resources (OER). The project relied on the wide experience of the consortium in the field of media literacy

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Paris, Canopé-CLEMI; Culot M., Orban de Xivry A.C. (2016), National Report Belgium. Report on the e-Lab experimentation, Brussels, Media Animation; Pereira S., Pinto M., Moura P. (2016a), Understanding the Current World. Report on the e-Lab Experimentation, Minho, University of Minho; Pereira S., Pinto M., Moura P. (2016b), Media uses and audiences in the digital environment. Report on the e-Lab Experimentation, Minho, University of Minho; Ranieri M., Bruni I. (2016a), Digital Storytelling as self-representation and social/civic agency. Report on the e-Lab experimentation, Firenze, Università di Firenze; Ranieri M., Bruni, I. (2016b), Make maps talking about arts. Report on the e-Lab experimentation, Firenze, Università di Firenze; Campion B., Verniers P. (2016), Mediated images. Report on the e-Lab experimentation, Brussels, IHECS; Kupiainen R. (2016), Media Cultures. Report on the e-Lab experimentation, Tampere, University of Tampere – EDU; Kotilainen S. (2016), Transcultural perspectives in Media Education. Report on the e-Lab experimentation, Tampere, University of Tampere.

education. The partnership was made up of six organisations highly engaged in Europe on these topics: Brussels School of Journalism & Communication (IHECS), Belgium; Media Animation (MA), Belgium; University of Tampere (UTA), Finland; University of Florence (UNIFI), Italy; University of Minho (UM), Portugal; Centre pour l'éducation aux médias et l'information (CLEMI), France; University College London - Institute of Education (UCL-IOE), England.

The project was based on three main phases, namely:

- Phase 1. Elaboration of a theoretical framework to represent media literacy education skills and competences for (pre- and in-service) teacher training and development of related evaluation tools.
- Phase 2. Design, implementation and experimentation of 10 training scenarios (TS) delivered in a blended modality through an online platform called eLAB, addressing (pre- and in-service) teachers (Table 1).
- Phase 3. Revision, improvement and dissemination of TS and educational resources through the eLAB released as an open educational resource (OER) on a wider scale for initial and continuing teacher training institutions.

Table 1  
TRAINING SCENARIOS

Country and partner	Title	Focus
Belgium - IHECS	MEDIATISED IMAGES IN CONTEXT (IHECS/TS1)	Analysis of images
Belgium - Media Animation	UNDERSTAND AND DECRYPT TV NEWS SHOW (IHECS/TS1)	Analysis of News show
Finland - UTA EDU	MEDIA CULTURES (IHECS/TS1)	Advertisements and pedagogy of multiliteracies
Finland - UTA CMT	MEDIA USES AND AUDIENCES IN THE DIGITAL ENVIRONMENT (IHECS/TS1)	Transcultural perspectives in media uses and education
Italy - UNIFI	DIGITAL STORYTELLING AS SELF-REPRESENTATION AND 'SOCIAL/CIVIC' AGENCY (IHECS/TS1)	Digital storytelling in educational contexts
Italy - UNIFI	MAKING MAPS TALKING ABOUT ART (IHECS/TS1)	Production of geo-related multimedia contents
France - CLEMI	EMI - NEWS MEDIA EDUCATION AS A CITIZENSHIP CHALLENGE (IHECS/TS1)	Analysis of News Media
France - CLEMI	ISM - IMAGES OF SCIENCES IN THE MEDIA (IHECS/TS1)	Awareness on the power of images for teaching sciences
Portugal - UNIMINHO	UNDERSTANDING THE CURRENT WORLD (UM/TS1)	Critical thinking and school media implementation
Portugal - UNIMINHO	MEDIA USES AND AUDIENCES IN THE DIGITAL ENVIRONMENT (UM/TS1)	Understanding media uses, particularly among younger publics

## 2.2 Participants

279 pre-service teachers, mostly aged between 20 and 24 years, attended the five training scenarios and most of them were female (N=259) (Table 2). As for the level of education, there were differences between students with only a high school diploma and students with a master's degree. Concerning previous online experiences, the answers depend on the national context: only in Finland are previous e-learning experiences common. As for the perceived level of media literacy skills, most trainees believe they have a good level of competence: only in Italy and Belgium did 1/3 of students declare they have a low level of media literacy.

Table 2  
 NUMBER OF PRE-SERVICE TEACHERS AND THEIR CHARACTERISTICS

TS	Number	Age	Gender	Education	Previous online experience	ML competences
IHECS	16	14 → 20-24 1 → 25-29 1 → 40	13 → F 3 → M	15 → Bachelor 1 → Master	3 → Yes 13 → No	5 → Low 9 → Good 2 → Very Good
UTA EDU	78*	6 → <20 36 → 20-24 12 → 25-29 8 → 30-34 4 → 35-39 2 → 40-44	66 → F 12 → M	56 → High school dip. 17 → Bachelor 5 → Master	60 → Yes 17 → No	2 → Low 72 → Good 4 → Very Good
UTA CMT	17**	2 → 20-24 6 → 25-29 3 → 30-34 4 → 35-39 2 → 40-44	13 → F 4 → M	11 → Bachelor 6 → Master	7 → Yes 10 → No	11 → Good 6 → Very Good
UNIFI TS 1	95***	90 → 20-24 4 → 25-29 1 → 34	95 → F	91 → High school dip. 2 → Bachelor 2 → Master	31 → Yes 64 → No	1 → Very Low 33 → Low 59 → Good 2 → Very Good
UNIFI TS 2	73****	67 → 20-24 2 → 25-29 3 → 30-34 1 → 40-44	71 → F 2 → M	65 → High school dip. degree 2 → Bachelor 6 → Master	36 → Yes 37 → No	2 → Very Low 31 → Low 38 → Good 2 → Very Good
TOTAL	279					

\* 85 students joined the training scenario, but only 78 filled in the pre-survey

\*\*18 students joined the training scenario, but only 17 filled in the pre-survey

\*\*\* 110 students joined the training scenario, but only 95 filled in the pre-survey

\*\*\*\* 87 students joined the training scenario, but only 73 filled in the pre-survey

Table 3  
NUMBER OF IN-SERVICE TEACHERS AND THEIR CHARACTERISTICS

TS	Number	Age	Gender	Education	Previous online experience	ML competences
MA	7 secondary	1 → <30 1 → 30-35 2 → 36-39 2 → 40-49 1 → 50-59	5 → F 2 → M	6 → Master 1 → High school	2 → Yes 5 → No	3 → Good 4 → Very Good
CLEMI TS1	5 primary	1 → 30-35 2 → 40-49 1 → 50-59	2 → F 3 → M	4 → Master 1 → High school	2 → Yes 3 → No	4 → Good 1 → Very Good
CLEMI TS2	7 secondary	2 → 30-35 1 → 36-39 2 → 40-49 2 → 50-59	5 → F 2 → M	7 → Master	4 → Yes 3 → No	3 → Good 3 → Very Good
UM TS1	27 mix order of school	4 → 36-39 15 → 40-49 8 → 50-59	22 → F 5 → M	12 → Bachelor 15 → Master	26 → Yes 1 → No	13 → Good 14 → Very Good
UM TS2	35 mix order of school	1 → 36-39 18 → 40-49 15 → 50-59 1 → 60 <	29 → F 6 → M	9 → Bachelor 24 → Master 2 → Doctoral	34 → Yes 1 → No	6 → Low 27 → Good 2 → Very Good
TOTAL	81					

### 2.3 Research Questions

With the aim of investigating the issue of teacher training on media and digital literacy education, this study addressed the following research questions:

- What are the main successful and/or challenging aspects of training pre-service teachers about media and digital literacy?
- What are the main successful and/or challenging aspects of training in-service teachers about media and digital literacy?

### 2.4 Method

With the purpose of gathering data to answer the research questions, a mixed strategy based on both quantitative and qualitative data was adopted. In each national context, a pre-survey was administered at the beginning to obtain data on demographics, previous experiences and expectations. At the end, participants filled in a post-survey on satisfaction, providing suggestions for future implementations. Trainers took notes on the process in a logbook including observations and reflections on significant learning situations,

difficulties and possible improvements. Each partner analysed and triangulated data to increase trustworthiness and credibility (Lincoln & Guba, 1985) and produced national reports which were to identify strengths and weaknesses of the training experiences. For the need of comparing and synthesising the data from the different countries, a grid of analysis was used to glean the main emerging aspects of each context. However, since there were differences between the diverse testing contexts, even in terms of sample size, several skype call meetings with trainers were necessary to reach a better understanding of findings. In addition, member checking (Cohen *et al.*, 2011) was carried out during the transnational meeting in Brussels (December 2016) to increase the reliability of data analysis and a final report was drawn up.

This recursive procedure of analysis, synthesis and reviewing led to the identification of the strengths and weaknesses of the implementation of training scenarios, according to four main dimensions: Didactics, referring to TS effectiveness, quality of methods and activities, transferability of resources; Modality, meaning the balance between online and offline activities and sustainability; Technology concerning the usability of the platform; and finally Participation, related to teachers' involvement in activities and satisfaction.

### 3 Results and discussion

#### 3.1 Pre-service teachers: Strengths and weaknesses

In general, all TS included both media analysis and production, and almost all participants found them to be the most interesting activities (Table 4). With the exception of Belgium, where trainees expressed their preference for online lectures, exploration and search for resources, in the other cases the activities of deconstructing media representations and creating media were perceived as significant. As regards future developments, most students declared they would not modify the activities since they “are already well structured, organised and useful”, while some students suggested increasing the focus on media production (Ranieri & Bruni, 2016a, p. 11). In some cases, for example UTA-EDU, trainees also suggested an improvement of the activity with flipped learning to increase the level of interaction and discussion among participants (Kupiainen, 2016, p. 11).

Table 4  
 MOST INTERESTING ACTIVITIES

	IHECS/TS1	UTA/TS1	UTA/TS2	UNIFI/TS1	UNIFI/TS2
Face to face meetings	7/13	13/78	7/17	26/95	20/73
Webinars	13/13	0/78	0/17	21/95	16/73

	IHECS/TS1	UTA/TS1	UTA/TS2	UNIFI/TS1	UNIFI/TS2
Exploration of resources	11/13	9/78	1/17	21/95	9/73
Search and editing of resources	11/13	10/78	1/17	25/95	21/73
Media analysis activities	1/13	48/78	6/17	31/95	17/73
Media production activities	5/13	48/78	9/17	34/95	34/73
Group work	10/13	50/78	6/17	41/95	30/73
Web Discussion	13/13	0/78	2/17	6/95	6/73
Collaborative work through wiki	12/13	1/78	1/17	7/95	6/73
Other	0/13	0/78	2/17	1/95	0/73

In all countries there emerged a strong expectation by trainees towards the development of pedagogical competences in the field of media education. This expectation has been partially disregarded in so far as the TS did not include specific pedagogical content on teaching media competences. One of the trainers from Finland commented: “The emphasis should be explicitly more on pedagogy of media education, now the pedagogy tried to integrate with assignments in a way that was not transparent to trainees” (Kupiainen, 2016, p. 7). This was largely discussed during the member check session in Brussels: the initial idea was that by teaching media literacy, trainers would also teach media education as in a modelling process. But trainees asked for a more explicit approach to the teaching dimensions of media education.

Another issue refers to the feedback on participants’ performances over the course. Providing individual and immediate feedback was really demanding, especially in those situations where the number of trainees was high as in Italy. Here the trainers observed: “In order to provide a continuous and sustainable guidance, even with large-size classes, the system of feedback delivery should be reshaped moving towards self-evaluation, providing worked examples and tests to check acquired knowledge unit by unit ” (cambia come segue: Ranieri & Bruni, 2016a, p. 11 and cambia come segue: Ranieri & Bruni, 2016b, p. 11). This issue was also discussed during the member check session in Brussels and different forms of peer feedback were mentioned as a means to reduce the gap between the single experience and the collective feedback, especially in pre-service teacher training.

The blended modality was new for many trainees, who showed different attitudes towards it. Face-to-face meetings were found significant by all participants, especially at the beginning and at the end to support technological

familiarisation and to provide final feedback (see e.g. cambia come segue: Ranieri & Bruni, 2016b, p. 11). The online activities and the use of the eLAB platform were not always perceived as relevant: in the Belgian context, the trainer talked about a kind of “eLAB avoidance strategies” by trainees (Campion & Verniers, 2016, p. 11) and trainees from UTA CMT did similarly. A totally different experience characterises what happened in Finland UTA EDU, where the trainer integrated other media tools in a Moodle platform, creating a kind of “e-MEL Hub Lab” (Kupiainen, 2016, p. 7). This approach was appreciated by the students and during the member check session trainers agreed that this could be a useful strategy to overcome the narrow boundaries of traditional platforms such as Moodle.

In terms of sustainability, the problem of time management emerged both in Belgium and Italy with some trainees asking for more time to complete some tasks or to work longer to finish media production. As observed in IHECS, “time management is also a dimension for the trainer who had to conciliate the coherence of the learning process, the experimentation itself and the constraints related to the academic programme where the experiment took place, which did not allow exceeding the planned experimentation period” (Campion & Verniers, 2016, p. 11). This introduces another common issue concerning the adaptation of the training scenario to the university context: media education in higher education is a new topic which requires changes to the academic curriculum in order to make these educational activities at the university sustainable (see also Ranieri & Bruni, 2018).

### ***3.2 In-service teachers: strengths and weaknesses***

Even in the case of in-service teachers, media analysis was particularly appreciated, especially in Belgium and France, where trainers placed particular emphasis on developing a critical eye on the media. As the Media Animation trainer stated, “the training scenario was designed to bring a lot of case studies and methodologies to support media critical analysis.” (Culot & Orban de Xivry, 2016, p. 5).

Another common aspect across the different contexts was the attention given to the transferability of knowledge and competences. Activities and resources were selected or designed to facilitate trainees to re-use them in their professional contexts. As a positive result of the experimentation, we can mention the fact that some teachers used the materials at school even during the experimentation or came back to the platform after the TS completion to download the resources (Culot & Orban de Xivry, 2016, p. 8, Bevort & Schweitzer, 2016b, p. 12). Table 6 indicates this trend: most trainees agreed or strongly agreed that the e-MEL resources or competences developed through

the programme were transferable to their professional contexts.

Table 5  
LEVEL OF AGREEMENT ON THE TRANSFERABILITY OF THE COMPETENCES AND RESOURCES  
DEVELOPED DURING THE COURSE

	The competences developed in the course will be useful for my professional life					I expect to use this training scenario or parts of it in my professional context				
	UM1/ TS1	UM2/ TS2	MA/ TS1	CL1/ TS1	CL2/ TS2	UM1/ TS1	UM2/ TS2	MA	CL1/ TS1	CL2/ TS2
Strongly Disagree	0	0	-	-	-	0	0	-	-	-
Disagree	0	1	-	-	-	0	1	-	-	-
Uncertain	0	1	-	-	-	1	3	1	-	-
Agree	5	6	2	4	1	4	7	1	4	1
Strongly Agree	19	20	3	1	1	19	17	3	1	1
TOTAL	24	28	5	5	2	24	28	5	5	2

As for course delivery, all training scenarios were based on a mix of face-to-face and online activities, which aroused different reactions and reflections relating to their weaknesses and strengths. On the one hand, trainers in courses delivered at a national level, like Portugal or France, observed that the blended-modality was a good choice in terms of teachers' involvement because it supported "the inclusion of teachers from a vast geographical range" (Pereira, Pinto & Moura, 2016a, p. 11); moreover, this modality provided trainees with "the advantage of working at their own pace" (Culot & Orban de Xivry, 2016, p. 6). On the other hand, face-to-face sessions are reported by all trainers as essential moments of interaction, which deeply contributed to the success of the learning process. This aspect was analysed and discussed during the national meeting, where trainers agreed on the opportunity to plan at least two face-to-face meetings, one at the beginning and one at the end of the course.

Even in the case of in-service teachers there emerged the need to have continuous feedback during the online training process: as commented by several trainers in the member checking session, trainees seem to expect an "always-on trainer", even at night. The discussion around this issue led the research team to identify two complementary strategies to ensure constant feedback in the in-service teacher context. On the one hand, the trainer should be conceived as a community manager fostering trainees' active participation and cooperation; on the other hand, the challenge of feedback may be tackled through a professional community of practice, where one can rely on peer support.

As far as the blended modality is concerned, the greatest challenge was about



workload; from all national reports, it clearly emerges that the effort required to carry out the online activities was almost always underestimated by trainers. During the discussion, trainers tried to explain this gap; probably trainees' competences were overvalued and this might explain why teachers tended to resist the use of this new online learning environment. This consideration is also consistent with the tendency by trainees to use more common tools and platforms to communicate and collaborate.

Another common problem was the timing of activities and deliveries, which was too short. Participants were already busy with their professional duties and dedicated their scant free time to the training, usually at night. A more relaxed pace is suggested: "the sessions shouldn't be weekly, but fortnightly. This change, we believe, would grant more time to explore the contents and resources available, it would foster a better assimilation of what is proposed and it would improve the performance of the trainees in the different activities" (Pereira, Pinto & Moura, 2016a, p. 10).

Regarding the eLAB platform, trainees found it unfriendly to navigate the platform because of the linear path of navigation which makes it "difficult to go back to previous activities and to move through menus" (Bevort & Schweitzer, 2016a, post 22). Technical difficulties were reported by trainers as a possible explanation for teachers' drop-out during the course. The French case is very revealing from this point of view: during the presentation of the training scenario, trainees thought that all activities were very easy for them, but the course proved to be rather challenging and the trainer recorded "from the very beginning, difficulties linked with the online work conceptually and technically". Only two teachers finished the course, and they agreed on the lack of technical skills of their colleagues: "for most of the trainees they were not able and maybe afraid to use the platform, to upload their documents and even to do the group work" (Bevort & Schweitzer, 2016b, post 12).

Looking at the level of participation, the national reports stress another relevant issue: the lack of institutional support did not allow in-service teachers to dedicate time and energy to the training. Even when the training was institutionally recognised as an activity of professional development and formative credits were attributed to the teachers, as in Portugal and Belgium, the lack of support was still a problem: as one trainer observed "the organisation of the in-service training sessions requires a real commitment of all the stakeholders (institution, trainees...) while taking account of the constraints (workload, time). This training cannot remain a matter for the «most engaged» ones" (Bevort & Schweitzer, 2016b, p. 14; see also Ranieri, Bruni & Orban de Xivry, 2017).

## 4 Recommendations and conclusions

Based on the results presented above, we will now try to draw some conclusions, while recognising the limitations of the study, that is a limited sample and the variety of the contexts. Indeed, we do not claim to generalise our final considerations. We just think that the results of the study along with the high expertise of the organisations involved in the project and the deep discussion which trainers had during the transnational member check sessions, provide the basis to suggest at least some recommendations for future implementation of media literacy training for pre-service and in-service teachers.

Following the analysis of the results, recommendations have been organised into four categories, namely Didactics, Blended Modality, Technology and Participation. In this tentative synthesis we also took into consideration the specificities of the different target groups, i.e. pre-service and in-service teachers.

### 4.1 *Didactics*

**Media analysis and production activities are important. Group work is relevant [pre-service & in-service teachers]**

Media analysis and production activities proved to be consistent with trainees' expectations and relevant in terms of perceived level of learning and satisfaction. Courses addressed to in-service teachers were designed to support critical media analysis, while pre-service training scenarios also involved production activities, often conducted adopting group work. This methodology was perceived as an exception to traditional university teaching and was much appreciated because students could experience it for themselves.

**Add a transversal module focused on Media Education competences [pre-service teachers]**

Analysing pre-service teacher training, there emerged a strong expectation towards the development of pedagogical competences. However, trainers agreed that the didactic dimension of media education should be addressed in a more explicit way, especially in the context of teacher education. A possible solution would be that of adding a module focused on pedagogical aspects; exercises and activities on how to design a lesson plan could be proposed to trainees in order to develop media education competences.

**Transferability of activities and resources [in-service teachers]**

Teachers expect to transfer what they have learnt to their professional contexts: that is why we recommend having this need in mind when designing activities, in order to facilitate the delivery of materials to trainees and their

adaptation to the school context.

## ***4.2 Blended Modality***

### **Importance of face-to-face meetings [pre-service & in-service teachers]**

Trainees consider face-to-face lessons significant in terms of learning, especially for deepening the topics and giving/receiving effective and timely feedback. On the other hand, trainers reported face-to-face sessions as essential moments of interaction, but they also stated that the blended modality was fundamental to allow in-service teachers' involvement. We suggest planning at least two face-to-face meetings, one at the beginning and one at the end of the course, which are essential to present the training scenario and to give a qualitative feedback at the end of the course.

### **Flipped approach [pre-service & in-service teachers]**

Another possible improvement related to the mode of delivery was suggested by trainees, who proposed adopting a flipped-approach for the group work; groups can organise themselves to meet and work, and then reflect on their experiences with trainers during face-to-face meetings. Trainees believed that flipped learning could be useful to increase the level of interaction and discussion among participants.

### **Workload of online activities [pre-service & in-service teachers]**

Trainees perceived the online workload to be too heavy, while trainers generally underestimated the real effort necessary to carry out the work. In consideration of that, it is advisable to add more time to work on the deliveries and to give a slower pace for online activities, as a minimum with fortnightly sessions.

### **Technology: eLAB platform as a hub of online resources [pre-service & in-service teachers]**

During the experimentation, it emerged constantly that participation and interaction through the eLAB platform was quite problematic, because trainees have a kind of resistance; when they did not understand the need to use the provided platform, they adopted a kind of “eLAB avoidance strategy” and preferred other tools, like common online. It is preferable to avoid “forcing” them; that is why we suggest future trainers to integrate other media tools in the Moodle platform.

## ***4.3 Participation***

### **Build institutional support [in-service teachers]**

As for in-service teachers, the main issue was the lack of institutional support which did not allow trainees to dedicate enough time and energy to the training.

In some contexts, the training was formally recognised as a professional updating, but still this was not enough to ensure participation. What teachers really need is the commitment of their local and national institutions (from the school to the National Ministry of Education) to concretely support their training, such as giving free time to be dedicated to professional development.

### **Adaptation of the TS to university context [pre-service teachers]**

As for pre-service teachers, there emerged a need for adaptation of training to the university context, which imposes constraints in terms of time and workload management, especially for media production activities. Media education in higher education is a new topic which requires changes to the academic curriculum in order to make it sustainable.

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# HERITAGE EDUCATION AND INITIAL TEACHER TRAINING: AN INTERNATIONAL EXPERIENCE

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The great interest and debate on teachers 21<sup>st</sup> century skills development is closely connected with a “new” approach to education and learning which inevitably affects the present and the future of the whole education system. Roma Tre University Museum Education Centre took part in the Erasmus + DICHE project (Digital Innovation in Cultural Heritage Education) and carried out activities taking into consideration the project theoretical model: informing primary school teachers of new education practices in cultural heritage fruition which employ technologies and also include the evaluation of their effectiveness in learning in terms of competences development. A web app devoted to integrate technology in heritage fruition within primary school education was designed and implemented as one of the project core activities. This paper presents the development and the piloting of this application for mobile devices as a tool for teachers in training: the MuseTech web app.

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## 1 Introduction

The combination of heritage, education technology and teacher initial training was explored and investigated from different point of views within the Erasmus+ DICHE project, *Digital Innovation in Cultural Heritage Education*. The research group, based at Roma Tre University, carried out its research within the main objectives of the project, which were primarily focused on informing primary school teachers, including both in service and in-training teachers, about new education practices which include heritage education, technologies employment and the evaluation of their effectiveness in learning (Poce, 2018).

Roma Tre University Centre for Museum Education was in charge of the design of pilot activities, taking into consideration the DICHE project theoretical model described in the following paragraphs. Some of the core activities were devoted to the creation of a web app aimed at integrating technology in heritage fruition within primary school education. Initial training teachers were involved in the use and evaluation of the app itself in terms of employment within their teaching and learning activity and findings related to assessment practices put in place are herewith presented. The objectives of the activity relate to the development of transversal and professional skills of in-training teachers: in particular, teachers had the opportunity to promote their digital skills and knowledge, through the use of the MUSETECH webapp, focused on heritage fruition and museum education. Professional skills, like design, implementation and evaluation of teaching and learning paths have also been promoted thanks to interaction activities with other teachers; communication skills and critical thinking skills have been developed through the specific webapp technical features.

## 2 State of the Art

The advent of new technologies carries remarkable implications for education due to the different nature of the cultural mediation it is based on. Parry (2007, 9) makes reference to McLuhan and starts from what he calls “the rudiments” of media theory in order to explain how and to what extent the digital dimension of museums affects the activities and experiences museum audiences are offered. In the postmodern age we live in, Parry’s view, which may be agreed with or not, basically concerns the influence that the medium exerts on the message. Indeed, as he states: “Far from being a passive and putative vessel merely carrying content, the medium used has a vital role to play in the construction of any communicated message.”

According to Parry, every communication technology entails a series of associations and consequences for the audience. In other words, users assign a



number of personal meanings to the medium, which are later connected to the very message conveyed; thus, it is necessary to carefully select the medium to convey meaning.

Issues concerning the use of new technologies in teaching and learning have called the attention of policymakers and educators at global level in recent years. The Italian National Plan for Digital Education, which served as a central pillar of “La Buona Scuola” school reform (Law 107/2015), promotes the experimentation with new teaching methods, the use of innovative tools, the dissemination of good practices, the development of school curricula, and the increase of laboratory activities. In this document, the use of technology in school is strictly linked with an intensive teacher-learner interaction (called “human relationship”, p. 7) and with a profound educational awareness, thanks to which digital competences are related to the challenges that society faces in interpreting and supporting lifelong learning (life-long) (see also European Commission High Level Conference document, 2014; New Vision for Education Report of the World Economic Forum, 2015; “Education for the 21st Century” study of The European House – Ambrosetti, 2014). Therefore, teachers training must support the development of digital competences to better fulfil the role of educators in contemporary society. Furthermore, the more digital literacy relates to the development of other transversal skills (such as critical thinking, communication, social and cross-cultural skills), the more it is functional and linked to the aspect of lifelong learning (P21 Framework definitions, 2015).

Before providing schools with expensive technology equipment, which rapidly becomes obsolete, it is of paramount importance to enable teachers to use technology and digital tools in general, in order to effectively introduce them in courses.

The national guidelines for primary school issued by the Italian Ministry of Education in 2012<sup>1</sup> stress the importance of studying arts and cultural heritage in the early years of schooling, especially in the context of experiential education where children learn about the world through a multisensory approach, based on different techniques:

Children’s encounter with art allows them to look at the world with different eyes. Exploring materials through the senses, experimenting with new techniques in the school laboratory, observing places (squares, gardens, and landscapes) and works of art (paintings, museums, and architectures) help children to improve their perceptive skills and nurture the pleasure of enjoying and creating art, thus bringing art and cultural heritage closer to children. (p. 20)

<sup>1</sup> Online in Italian at: [http://www.indicazioninazionali.it/documenti\\_Indicazioni\\_nazionali/indicazioni\\_nazionali\\_infanzia\\_primo\\_ciclo.pdf](http://www.indicazioninazionali.it/documenti_Indicazioni_nazionali/indicazioni_nazionali_infanzia_primo_ciclo.pdf)

In this light, the Roma Tre research group developed a digital menu of possible teaching scenarios, which includes the use of technologies for cultural heritage enjoyment and which later became an application for mobile devices, which was used and evaluated by a considerable number of users, initial in-training teachers, in particular, as discussed in the following paragraphs. The main aims of the teachers' training activity under investigation are the following:

- to design and implement the MUSETECH webapp for teachers' training activities;
- to use culture heritage education and digital tools to promote transversal and professional skills in in-training teachers;
- to development digital tools use and digital skills promotion in teachers' training activities.

### 3 Research design and methodology

In October 2016, a module for primary school in-training teachers was launched within the "Educational Research Methodology", Department of Education, Roma Tre. In particular, the 180 in-training teachers participating in the course were those in the second year of the five-year-long degree course in Primary Education Sciences. The "Educational Research" module was scheduled in one term and dealt with the DICHE project theoretical and practical aspects. In addition, from October to December 2016, two hours a week, attendees were involved in activities concerning the design of innovative education projects with the purpose of promoting cultural heritage and developing learners' 4C skills.

The DICHE project-related areas devoted to the training module were the following:

- basic contents: Museum Education and cultural heritage promotion;
- the KSAVE (Knowledge, Skills, Attitudes, Values and Ethics, Griffin et al. 2012) model and cross-sectional skills assessment tools;
- the DICHE project Research Agenda;
- the DICHE menu of teaching scenarios for arts and cultural heritage education;
- the Baths of Diocletian National Museum (CoopCulture<sup>2</sup> was responsible for this part);
- Museum Education experiences integrating the use of digital tools to enjoy the visit at the Baths of Diocletian National Museum.

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<sup>2</sup> CoopCulture is the acronym for Società Cooperativa Culture, a DICHE project partner. <https://www.coopculture.it>

### *3.1 Training of teachers, students and museum educators*

Lessons were taught by Roma Tre researchers, with the help of CoopCulture staff who were responsible for the contents concerning the Museum selected as the location of the pilot phase activities. Roma Tre researchers also took care of teaching materials' preparation, including the translation into Italian of texts to be distributed to participants such as DICHE Research Agenda and the KSAVE model document regarding the "4C" skills to be developed within the experience, namely communication, collaboration, critical thinking and creativity (Trilling & Fadel, 2009).

In order to carry out the activity aimed at designing Museum Education experiences based on the DICHE model, in-training teachers were divided into 18 groups of approximately 10 units each and were asked to collaboratively work on an online document stored on Google Drive and shared with group members and with Roma Tre researchers, the latter playing the role of e-tutors throughout the whole process. The selection of an online platform to store and share files was meant to allow learners to autonomously work on the project from home and, simultaneously, to allow e-tutors to monitor and revise projects, and to provide participants with feedback and support.

Student groups were given precise instructions on how to properly carry out the activity. In detail, the project, to be written as the basis for the design of museum education experiences, had to focus on the following elements: Primary school children as target learners, the use of technology and digital tools (to be selected in the DICHE menu) as methodology and museums' arts and cultural heritage as content. Moreover, the goal of these experiences had to be the development of one or more within the so-called "4C" skills list (communication, creativity, collaboration and critical thinking). For this purpose, stimulus questions were proposed by the researchers to student groups to help course design. Some are given below:

1. Which skills are to be developed in the course? How, and through which activities?
2. How and when technology and digital tools will be introduced?
3. Which museum artifacts will be used and how?
4. What is the final structure of the course?

Another important aspect of the Museum Education experiences designed by students was that they had to be in line with the Italian national guidelines for primary school education, an official document issued by the Ministry of Education and dealing with the learning objectives of each year of primary school in terms of knowledge, abilities and skills children are expected to acquire and develop.

Moreover, the document to be written when designing courses had to follow specific guidelines concerning the word limit of each section, which read as follows:

1. Hypothesis and Objectives: between 250 and 300 words
2. Didactic Unit: between 200 and 250 words
3. Expected Results: between 250 and 350 words

In the first section, titled *Hypothesis and Objectives*, students had to present and discuss their project hypothesis and objectives. Accordingly, this section also contained a list of the target skills selected and their definition.

- The *Didactic Unit* represents the structure of the course. Students were asked to design units including the following elements:
- Title of the course
- Description of the course
- Target learners, i.e. type of pupils and class
- Structure of the course, i.e. number of lessons, types of activities and tools, lesson schedule and programme. This sub-section is the largest part of the unit
- Duration of the whole course and of lessons and outings
- Teaching materials, i.e. booklets, videos, audio files, etc., especially with reference to the digital and technology tools selected between those offered in the DICHE menu of teaching scenarios
- Assessment of the course, i.e. type of assessment activities, methodology, test duration

The third section, namely *Expected Results*, presents the results students are expected to obtain at the end of the course.

Students took part in the design activities until December 2016. For this purpose, they were divided into 18 groups of 9 or 10 people each and started working on their project: 17 groups fully completed their task. In other words, at the end of this phase, 17 courses were produced according to the Research Agenda theoretical framework and to the DICHE menu of teaching practices.

## 4 The DICHE Menu of teaching practices

The menu is the digital tool which comprises all the theoretical contributions offered by DICHE partners and which translates the methodological approaches to basic skills' development into teaching scenarios through cultural heritage enjoyment and technology use. The menu<sup>3</sup> is an online database which contains

<sup>3</sup> Available at <http://www.diche-project.eu/resources>

best practices and education tools for teachers.



Fig. 1 - The menu of teaching scenarios of the DICHE project.

The menu’s target users are primary and secondary school teachers, together with museum educators, who want to design, create and evaluate innovative programs for students aged between 10 and 14 years, in formal and informal education contexts. The description of teaching practices and digital tools is available in English, Italian and Dutch, to increase the number of potential users.

Research can be carried out by either selecting options inside the menu and typing keywords or filtering the different types of resources (teaching scenario or digital tool), uses (tracking, mapping, routing; presenting, reporting; exploring, researching, inquiring; instruction, assignment; recording, collecting), contexts (classroom; museum; heritage site; home) or the language of the digital resources (app, software, website).

The database can also be accessed to read its contents and/or to adapt them to the educational needs of the real-world context of use, and of the tools available.

The menu of teaching scenarios was used during the project pilot phase by Italian and Dutch partner institutions to assess the database effectiveness, the theoretical structure of reference for the project and also the impact of the teaching scenarios created by in-training teachers.

In particular, Roma Tre researchers developed a specific tool for the pilot phase: the *MuseTech* webapp and an evaluation questionnaire for the DICHE Menu.

## MuseTech<sup>4</sup> webapp

The name of this web application derives from the combination of the words “museum” and “technology” which represent the foundations of the

<sup>4</sup> Available at: <http://www.musetech.it>

DICHE project. The idea of designing a web app came into being from the need for a single application which could be used on different mobile platforms and operating systems, without the need to be installed on devices and/or continuously updated. By simply accessing the Internet, MuseTech allows users to enter the DICHE menu of teaching scenarios and, simultaneously, to evaluate and share their contents.

The introduction of a social dimension in the project is indeed a value which MuseTech adds to the menu: an increasingly higher number of users can be reached, the audience gets wider and wider, and this creates a network of researchers, teachers, students and museum educators / pedagogists / education professionals in general orbiting around the project tools and practices. Like other famous web apps and Internet services (such as, among others, TripAdvisor® and Yelp!®), MuseTech allows users to vote for the contents they find in the menu and like the most, thanks to a five-star rating system. Moreover, users can share the contents they voted for on social media platforms such as Facebook®, Twitter®, and Google+® which favor communication and interaction within the community.

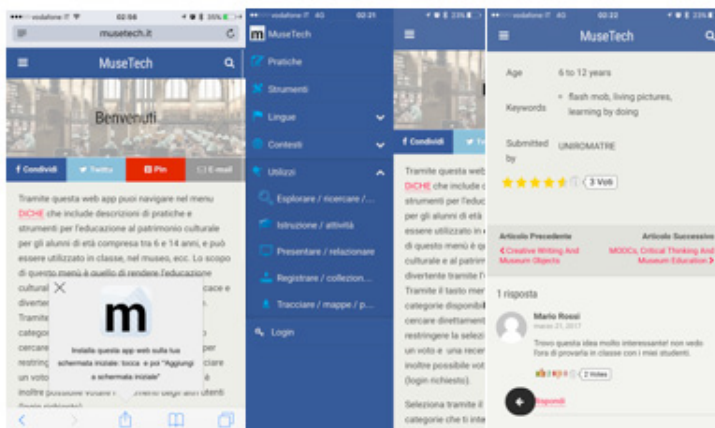


Fig. 2 - Screenshots of MuseTech web app.

MuseTech was used by in-training teachers of the degree course in Primary Education Sciences and by primary school teachers Roma Tre University involved in the project pilot phase, as well as by all participants in the events Roma Tre researchers organized for dissemination purposes. Using the MuseTech app, teachers and in-training teachers had the possibility to promote their critical evaluation skills, reading, voting and giving feedback on innovative teaching and learning paths in the field of Museum Education

and heritage fruition. They also took part in teaching communities discussions and interacted to analyse teaching methodologies, innovative teaching and learning tools, culture and heritage education contexts.

## 5 Analysis of Results and Findings

In order to assess the impact of the DICHE resources and of the MuseTech webapp the research group created a *corpus* made by the comments inserted by the users. The table below lists all the resources included in the webapp and summarizes the quantitative evaluation that users expressed while evaluating the tool.

The size of the coepe is 122,962 words, of which 6,762 unique tokens.

Table 1  
MUSETECH RESOURCES AND THEIR EVALUATION RATES

Resource/Teaching scenario Title	1 star	2 stars	3 stars	4 stars	5 stars	avg stars	# of comments
SMartART	0	0	4	10	21	4,5	31
Digital Storytelling	0	0	2	7	3	4,1	9
MOOVLY - animated videos and presentations	0	1	1	9	3	4,0	18
Heritage App	0	2	0	4	3	3,9	5
News school report - creating and writing a news report, supported by BBC	0	1	2	3	9	4,3	16
StoryWriter - A digital tool for collaborative storytelling	0	0	2	4	1	3,9	7
Audacity - Free software for audio recording	0	0	0	2	2	4,5	4
WeVideo - Cloud-based video creation platform	0	0	2	1	2	4,0	4
InHerit, heritage interpretation course materials	0	0	2	3	3	4,1	7
Kamp Amersfoort	0	0	1	1	4	4,5	5
Scatt-Arte - Photos of art	0	1	0	0	10	4,7	11
Augmented Reality for orientation	0	0	0	2	0	4,0	4
Toolbox with 4 basic Heritage tools	0	0	0	1	0	4,0	1
Radio Local - make a radio report of a local interesting place	0	0	2	2	2	4,0	9
Around the church - making an animation after local church visit	0	0	0	0	6	5,0	9
Participatory mapping with Story Map	0	0	1	2	1	4,0	5
Edublogs - The largest education blogging platform on the web	0	0	0	0	2	5,0	2
Popplet - A mind-map tool to organize ideas	0	0	0	3	2	4,4	7
Answer Garden - A minimal feedback tool to get attention	0	0	0	0	0	0,0	1

Resource/Teaching scenario Title	1 star	2 stars	3 stars	4 stars	5 stars	avg stars	# of comments
Newsela - Online reading platform to develop critical thinking skills	0	0	0	2	3	4,6	8
Huntzz - Treasure hunts and tours across the UK and Europe to experiment gamification	0	0	0	0	0	0,0	0
My Culture Quest – An interactive site to travel across the world	0	0	0	0	3	5,0	5
SMARTART: When the Images Speak of Art	0	0	0	2	3	4,6	4
The history of a village comes to life	0	0	1	1	0	3,5	2
Present history your digital way!	0	0	0	0	0	0,0	0
Use of Padlet in a lesson about the Dutch East Indies	0	0	0	0	0	0,0	0
CSI Leiden - film report of 18th century crime in Leiden	0	0	0	0	0	0,0	0
The Internet Archive	0	0	0	0	1	5,0	2
The Michelangelo project, an overview of the European Fine Arts	0	0	0	0	0	0,0	0
Dutch Arts and Culture Search Engine	0	0	0	0	0	0,0	0
TimeGlider: creating timelines	0	0	1	0	1	4,0	0
Capzles: social storytelling	0	0	0	0	0	0,0	0
Minecraft, create your own world	0	0	1	0	0	3,0	0
12 art and culture lessons for Audiovisual education and Media-art	0	0	0	1	0	4,0	0
Powtoon	0	0	0	2	0	4,0	2
Boomwriter	0	0	1	1	1	4,0	3
Kahoot!	0	0	0	1	3	4,8	4
Thinglink	0	0	1	1	0	3,5	3
Between museums and creativity	0	0	0	1	1	4,5	1
Rijksstudio - discover the possibilities with masterpieces from the Rijksmuseum Amsterdam, Netherlands	0	0	1	0	0	3,0	0
Lupus in Fabula! Discovering animals in Ancient Rome	0	0	1	2	1	4,0	2
Mass communication in Roman Times	0	0	1	0	1	4,0	1
Aqueducts and Baths	0	0	0	1	0	4,0	0
The "Tablets" of days gone by	0	0	2	0	0	3,0	1
The Techno side of Empire	0	0	1	1	0	3,5	3
Gods for a day	0	1	14	68	58	4,3	152
Solve historical riddles through Kahoot!	0	1	9	44	58	4,4	126
MOOCs, critical thinking and museum education	0	2	33	91	42	4,0	185
Recreating artwork through Flash mobs and living pictures	0	0	11	56	118	4,6	208



Resource/Teaching scenario Title	1 star	2 stars	3 stars	4 stars	5 stars	avg stars	# of comments
Creative writing and museum objects	0	5	41	79	39	3,9	183
The Critic Globus experience	0	2	20	52	74	4,3	169
Object Based Learning and 3D Printing	0	2	13	69	63	4,3	171
Travelling Planetarium	1	1	20	66	105	4,4	220
Europeana	0	7	43	47	25	3,7	137
Art Stories FACES	0	8	51	57	39	3,8	177
ArtPlanner - creating a trip planner	0	4	24	77	56	4,1	184
Cardboard, a VR app for Android smartphones	2	3	34	34	25	3,8	116
SMARTART – WHEN THE IMAGES SPEAK OF ART	1	3	23	63	46	4,1	160
TOTAL	4	44	366	873	840		2384

In the app 2127 votes were collected (5 stars rating system) divided as follows: 4 votes for 1 star rating, 22 for 2 stars rating, 366 for 3 star rating, 873 for 4 stars rating and 840 for 5 stars rating.

The DICHE resources, accessed from the MuseTech webapp, were basically marked with a very high rating: the lowest rated resource, with at least 10 votes, was “Europeana” with an average rating of 3,7 stars; the most voted resource was “Scatt-Arte - Photos of art” with an average rating of 4,7 stars. The most commented resource (“Travelling Planetarium”) obtained a reasonable 4,4 stars rating in average.

The following list instead summarises the characteristics of MuseTech webapp in terms of number of resources, commenters, comments, votes and level of rating:

- number of resources: 58
- number of unique commenters: 204
- number of comments: 2384
- average number of comments per commenter: 12
- average number of comments per resource: 41
- total number of votes: 2127
- number of 1 star votes: 4
- number of 2 stars votes: 44
- number of 3 stars votes: 366
- number of 4 stars votes: 873
- number of 5 stars votes: 840
- resource most commented: Travelling Planetarium (220 comments)

Most frequent words used in the comments are: “a lot” *molto* (1746); “interesting” *interessante* (1293); “children” *bambini* (1098); “way” *modo* (740); “useful” *utile* (579). These words are very generic and not necessarily related with education (except for “children”). We decided then to look for specific words related to museum education: “museum” *museo* (249); “art” *arte* (473); “cultural” *culturale* (198); “culture” *cultura* (139); “visit” *visita* (251); to technology: “technology” *tecnologia/e* (221); “technologic” *tecnologic\** (34); “smartphone” (66); “digital” *digitale/i* (195) to initial teacher training: “education” *educazione* (4); “student” *alunn\** (274) or *student\** (535); “training” *formazione* (17); “teacher” *docent\** (121) or *insegnant\** (78); “school” *scuola* (196).

Afterwards, we defined the most frequent segments containing these words. For example, particular interest was paid to identify segments containing the word “training” *formazione*: in some cases, it was used with the meaning of “training”; “Open and online training is a great opportunity” *La formazione aperta e online è una grande possibilità*; in other comments, it was used with the meaning of “formation”, “the formation of critical thinking” *la formazione del pensiero critico*. As expected, words from the same semantic ontology are recurring more frequently together: for example, “museum” *museo* and “visit” *visita* are strongly related, since they appear in the same segment 74 times as shown in the figure below.

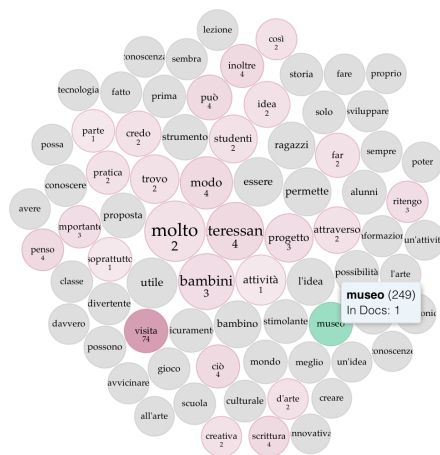


Fig. 3 - Recurring words in users' comments related to “museum” *museo*.

The analysis of the comments pointed out that the users found the proposed teaching scenarios and resources very interesting and their comments highlighted

also that the connection between museum, technology and heritage education is strongly understood and appreciated. The high number of comments and votes demonstrates the wide use of the app and their high involvement in activities of analysis and evaluation of innovative learning paths.

Unfortunately, comments did not provide with the evidence that possible evaluation is connected to their effective use in initial training of teachers. More results in this sense are available in the following paragraph which presents the results obtained from DICHE menu evaluation survey administered on purpose.

### *5.1 The evaluation survey*

After the use of the MuseTech webapp, an anonymous evaluation questionnaire was proposed to the in-training teachers to assess the quality of the DICHE resources and of the DICHE menu itself. We obtained 425 filled in questionnaires, with an average answering time of 18 minutes and 51 seconds. Due to limited space, only the results of the closed questions are shown below.

The questionnaire was organized in three activities: the first one, the introductory one, had as a main objective to assess the impact and the usefulness of the DICHE menu itself. As far as this activity is concerned, the first 5 minutes were devoted by each respondent to explore the menu, and only after such a time, the respondent was able to access the survey questions. The respondent was asked to provide, on a 5 points Likert Agreement Scale, an agreement value to the following sentences:

- It is clear to me what the menu provides (I don't agree 3%, I somewhat don't agree 10%, I somewhat agree 61%; I fully agree 26%);
- The menu looks attractive (I don't agree 3%, I somewhat don't agree 50%, I somewhat agree 32%; I fully agree 15%);
- This menu is useful for me as a teacher (I don't agree 1%, I somewhat don't agree 57%, I somewhat agree 7%; I fully agree 35%).

Looking at the percentages, it appears clear that the DICHE project menu rationale is very manifest (87% of respondents agrees or fully agrees) but more than half of the respondents did not like the graphical design of the menu (53%) and the 58% of interviewed in-training teachers did not found the menu useful for their daily work.

Then the following two open questions “Which digital tools or practices would you like to add to the menu” and “I would like to make a suggestion to improve the menu” were proposed.

The second activity, called “Value of the tool”, was described as follows: “Find a digital tool that will suit the project/lesson that you carry out. Then answer all questions on a scale: don't agree/agree somewhat/ mostly agree/

fully agree”. Findings are reported below:

- The search filters are adequate (I don't agree 2%, I somewhat don't agree 11%, I somewhat agree 74%; I fully agree 13%);
- The results are irrelevant to my search (I fully agree 3%, I somewhat agree 21%, I somewhat don't agree 45%; I don't agree 33%);
- It was difficult to find a suitable tool (I fully agree 2%, I somewhat agree 24%, I somewhat don't agree 55%; I don't agree 19%);
- I found a suitable tool that I would like to use (I don't agree 2%, I somewhat don't agree 7%, I somewhat agree 67%; I fully agree 24%);
- There is enough choice (I don't agree 1%, I somewhat don't agree 11%, I somewhat agree 57%; I fully agree 31%);
- Many of the tools in the menu are familiar to me (I don't agree 11%, I somewhat don't agree 44%, I somewhat agree 36%; I fully agree 9%);
- The description of the tool is unsatisfactory (I fully agree 5%, I somewhat agree 21%, I somewhat don't agree 51%; I don't agree 23%);
- The information provided about the tool inspires me to use it in my teaching practice (I don't agree 2%, I somewhat don't agree 11%, I somewhat agree 54%; I fully agree 33%).

Numbered Basically, the menu was positively evaluated by the respondents: most of respondents agreed that the search filters were adequate (87%), the results were relevant to what they searched (78%) and that it was not difficult to find a suitable tool (74%). Almost 9 out of 10 respondents agreed on the possibility to find a suitable tool to use (91%), that the information provided inspired them to use the tool in their daily work (87%) and that there was enough choice in the menu (88%). 74% of the respondents did not agree with the fact that the description of the tool was unsatisfactory and more than the half of them (55%) were not familiar with the tools in the menu.

Then three open questions were proposed: “What I liked most”; “What I liked least” and “I would like to make a suggestion to improve the tools section of the menu”.

The third activity, called “Value of the practice”, was devoted to assess one practice in particular. Four practices were chosen and randomly allocated to each respondent:

- Digital storytelling (99 respondents)
- *SmarArt* (95 respondents)
- The History of a Village comes to life (106 respondents)
- *Radio Local* (97 respondents)

Then each respondent rated the following statements related to the practice

singled out:

- This practice is inspiring
- The description is complete
- The language is clear
- The explanation is comprehensive
- I can imagine how this practice can be applied
- The use of digital tool(s) adds value to this practice

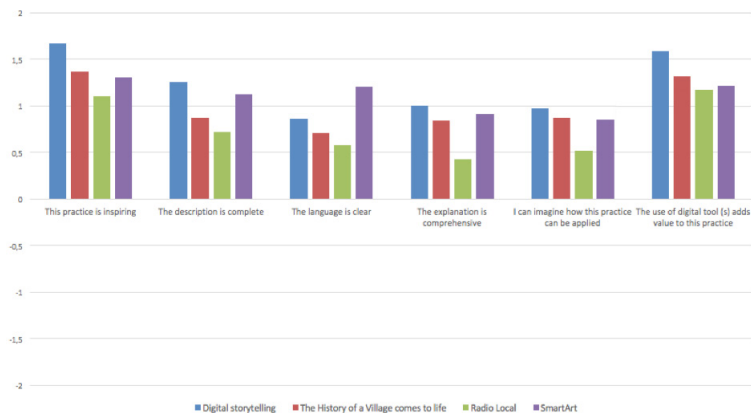


Fig. 4 - Rating of the statements for each practice singled out.

The generally very positive evaluation of the menu and webapp contents make the researcher confident that the quality of the materials is acceptable and adequately used for teacher training, both in terms of pedagogical consistence and digital innovation. The in-training teachers had the opportunity to be faced with activities of analysis, critical evaluation and commentary of teaching scenarios and digital tools, thus promoting transversal communication skills and digital literacy.

## Discussion and conclusive remarks

The rationale at the basis of the activities carried out within the project was primarily that of informing in-training and initial in service primary school teachers about new education practices which include a critical use of technology and its effectiveness in learning. Issues concerning the use of new technologies in teaching and learning have called the attention of policy makers and educators at global level in recent years. As already mentioned, expensive technology equipment is useless if teachers are not trained in digital tools employment within their teaching and learning activities. As for as the

core content of the project is concerned, the Italian Ministry of Education in 2012 guidelines for primary school stresses the importance of studying arts and cultural heritage in the early years of schooling.

All taken into consideration, the Roma Tre research group developed the digital menu and the web app described and carried out the analysis reported above.

As shown from results, the idea was that of facilitating in-training and early in-service teachers in the awareness and critical use of technology in their teaching and learning especially as far heritage education was to be integrated in their classes. The activities designed for in-training teachers aim also at promoting educators' professional skills in general, teaching and learning paths design and assessment procedures project in particular. The use of digital tools and the integration of digital literacy in everyday activities are to be conceived as a life-long learning approach, both for in-training teachers and their (future) pupils.

The DICHE menu was generally appreciated by the in-training and prospective teachers. Moreover, the MuseTech webapp pointed out the possibility of the use on-the-go of the DICHE menu, plus a social sharing module and 5-stars voting system that were absent in the original menu. The rating system highlighted a very high rate for the majority part of the resources accessed from the MuseTech webapp. Comments analysis confirmed what emerged from the webapp integrated voting system by adding details about respondents' interest in the DICHE resources. In-training teachers were actually given the possibility to test teaching and learning materials suitable for vocational and digital training and, in fact, digital tools and teaching scenarios quality is positively evaluated, as shown from the data described above.

The design of the training activity was meant to facilitate the acquisition of specific knowledge and skills, as far as the digital dimension is concerned, but it was addressed especially to help in-training teachers reflect on the activities proposed and critically evaluate them. That is why the survey itself was delivered according to a specific timing of analysis: first the fruition of the tool, then the questions related to its features and use. As mentioned above, 9 out of 10 respondents agreed on the possibility to find a suitable tool to use (91%), that the information provided inspired them to use the tool in their daily work (87%) and that there was enough choice in the menu (88%). The evaluation activity called "Value of the practice", then, asked each respondent to focus on one practice in particular and this allowed to deepen in-training teachers' reflection and critical thinking skills. The idea in the design of such training programme was to enhance both the horizontal and vertical dimension of the action addressed to professional development.

Besides the results, which highlight a general appreciation of the tool, it is

important to notice that users had the opportunity to know about free digital scenarios and practices that otherwise were completely unknown. Moreover, the possibility for the users to choose a specific scenario or practice according to their actual teaching and learning needs enhances the effect of the potential technology has to empower certain skills both in the educators and in the pupils who participated in the proposed activities.

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# INITIAL TEACHER EDUCATION AND LEARNING ENGLISH AT PRIMARY SCHOOL IN TUSCANY: CREATIVE PERSPECTIVES, CURRENT CHALLENGES, AND POSSIBLE APPROACHES

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**Keywords:** ITE for English in Primary School, Council of Europe language education reference documents, curriculum development, virtual lesson-in-action videos.

This paper considers important contributions from language teaching and learning literature, so as to identify current challenges and issues related to initial teacher education in the preparation of trainee Primary School teachers to teach English in Primary School in Italy. It then examines the role of the English Language Learning-Teaching Methodology Workshops in initial teacher education in the context of the recently instituted five-year Degree Course in Primary Education at the University of Florence (2011). This is followed by a brief account of the English Language Learning and Teaching Methodology Workshop for the initial cohorts (aa. 2011-2016), and the use of reference documents and tools (Council of Europe and National Guidelines) for language teachers as a starting-point for the development of the methodology curriculum within the degree-course. The initial English Language teacher-training gaps and a possible way to address the issues

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follow.

The results of the study identify possible future directions and issues which, at least in the University of Florence context, appear to be of major importance. Said issues also have a profound impact on teaching-learning contexts, and, most likely, demand meaningful actions if they are to be resolved in a productive way both for pre- and inservice teachers as well as their learners.

## 1 Introduction: Voices from teacher education literature

Research into teacher, as well as language-teacher education programmes has a long history with significant contributions to the literature since, at least, the 1980s. Here, we consider the topic by drawing on important voices from teacher education literature.

In their review of language teacher education programmes, Richards and Crookes (1988) reported that 75 percent of teachers are engaged in a training-placement or practicum. The latter included a series of different activities such as: the observation of experienced teachers or peers and reflection on the 'process'; being observed by supervisors/mentors or conferencing with them; participation in peer-/micro-teaching situations, as well as assuming direct responsibility for learning in the classroom. In the 1990s, the literature on Teacher Education was prolific and highlighted serious concerns with both the topic and the process. Fullan (1991) made an indepth study of the various issues related to the introduction of educational change. Language teacher educators (Crandall, 1994, Johnson, 1996, Richards, 1990) called for longer and more intensive training-placements or *practica* throughout ITE programmes, so that future teachers could better link theory and practice, while, at the same time, ITE programmes could provide professional support to enable trainees to learn from experienced teachers, as well as promote reciprocal learning within the profession. Despite familiarisation with positive professional activities, Crandall (1996) concluded that the amount of such experiences was not enough, they happened at too late a stage in ITE programmes, and were not appropriately focused on what really happens in classroom and school-contexts, or in the overall programme. The need to envisage opportunities for collaboration and teamwork within ITE programmes is clearly stated in Kaufman and Grennon Brooks (1996, p. 231):

if teachers are to collaborate in schools and create enhanced interdisciplinary classroom environments that better foster students' linguistic and academic growth, they must experience such pedagogy in teacher education programs at the university.

Indeed, in our context, this statement assumes even greater importance

when one considers the implementation of proposed CLIL initiatives also at Primary level in Italy.

A further issue which emerges from the literature is that, in general teacher education, ITE envisages more time in real teaching situations than happens in language teacher preparation programmes (and as we shall see later in this paper, this is also relevant in our context). Crandall (2000) appropriately considers language teacher education as being ‘a microcosm of teacher education’, and highlights the influence of theories and practices in general education on the field. Indeed, also Crookes and Chandler (2001, p. 131) identify a major problem with both foreign language teacher education and teacher education programmes in general. The issue is that ITE programmes:

do not prepare the teacher to engage in a process of life-long learning, do not help teachers to use published research, and do not provide them with a problem-solving orientation to their own classroom teaching.

According to the ETUCE Policy Paper (2008, p. 15), ITE programmes in Europe:

need to cover educational theory, pedagogy and classroom techniques as well as exposure to a range of related disciplines including child psychology and the law related to education. In addition, courses need to properly integrate teaching practice in schools, under controlled conditions, mentoring and supervision. *All this is on top of subject knowledge* (my italics). Also, as society changes public authorities regularly add new requirements to teachers’ workloads, such as multicultural education, or information technology applications in the classroom; and these need to be addressed in teacher education. Teacher education students need to be able to absorb and reflect on this broad range of knowledge and competences, and they need to be supported in this process.

The problem is not isolated or found in just one place. In the US, the National Council for the Accreditation of Teacher Education (NCATE, 2010) published a report in relation to developing partnerships for improved learning. The report states that it is necessary to change the manner in which teachers are prepared for their future profession if they are to be:

[...] effective and fully prepared for the uncertainties and challenges they will confront in the 21<sup>st</sup> century classrooms. In light of this, one needs a dramatic change in how teachers are prepared. This requires two major shifts. First, the very focus of programs needs to be redesigned from beginning to end. Teacher education has too often been segmented into subject–matter, preparation, theory,

and pedagogy taught in isolated intervals and too far removed from clinical practice. But teaching, like medicine, is a profession of practice, and prospective teachers must be prepared to become expert practitioners who know how to use the knowledge of their profession to advance student learning and how to build their professional knowledge through practice. In order to achieve this, one must place practice at the center of teaching preparation.

In moving from the voices from the classroom and their action-research literature towards ITE in an Italian context, we highlight the fact that, since the year 2000, the number of learners acquiring an additional language at Primary School at a global level has increased. Together with this increase, however, educational and language researchers, as well as policymakers express their concerns as regards the appropriateness of teacher-training in all areas of language learning, the lack of preparation in language assessment (Hasselgreen, Carlsen & Helness, 2004; Guerin, 2010; Vogt & Tsagari, 2014), the real language competence levels of teachers in many countries (Nguyen, 2011), and issues related to language programme accreditation, accountability, and evaluation. In the last decade, Allen and Peach (2007, p. 23), in their exploration of the in-field and on-campus components of an ITE programme make no secret of a constant issue which dominates ITE:

One of the major and long standing challenges of preservice teacher education programs has been to strike a balance between the theory and practice of the profession.

Furthermore, they identify a widely-held concern which has not gone away and which draws on the statement by Levine (2006, p. 12) that ‘Current teacher education programs are largely ill equipped to prepare current and future teachers for new realities’. He goes even further when he states that ‘one of the biggest dangers one faces is preparing teachers who know theory and know nothing about practice’.

Thus, it seems that, the overall indications which emerge from the literature seem to suggest changes are required in ITE programmes. Another essential point would appear to be that practice needs to be at the heart of teaching (NACTE, 2010).

## 2 The ITE degree-course in Primary Education in Italy

In light of the above-mentioned considerations, we now turn our attention to present-day Italy, where learning and teaching an additional language in Primary Education has had, and, quite probably, still has a chequered existence,

to say the least. A brief summary of this chequered existence is given here below as a background against which to set the issues raised and the related discussion in this paper.

Learning an additional language, in this case, English at Primary School in Italy, really came into the spotlight following legislation (Law n. 59/2004, art. 5) which aimed at implementing the teaching of English throughout Italian Primary Schools. From a historical perspective, as far back as the 1970s (Law n. 820/1971), and even earlier in specific areas of Italy (i.e., the 1960s in Tuscany), we can find evidence of the introduction of activities to promote the learning of an additional language in what was then Elementary School. With the University Reform legislation in 1990, the basis for the first degree-course in Primary Education Sciences was set in motion. The related details pertaining to its implementation appear in legislation in 1996 and 1997 which states that this degree-course becomes effective from the beginning of the 1998-1999 school year. In 1991, the teacher of an additional language in Primary School took on an institutional role for the first time. This saw the introduction of what is referred to as the figures of the ‘specialist’ and ‘specialized’ language teachers. From 1998 to 2006 within the context of the four-year degree-course in Educational Sciences, and from 2006 to 2010 with Primary Education Sciences, ITE included different types of courses in an additional language and in language teaching methodology - in this particular context the possibility for undergraduates was to study either English or French. More recently, in 2010-2011 with the enactment of the relevant 2007 and 2008 laws, the introduction of the new five-year degree-course in Primary Education Sciences (LM-85 bis 2011-12), admission to which is gained through successfully passing a national entrance examination, the curriculum introduced English language workshops for a total of 10 educational training credits (ETCs) for an overall total of 120 hours. In addition, there is a University of Florence (UNIFI) in-house University Language Centre (CLA-UNIFI) ‘certifying exam’ in English language competence at the Common European Framework of Reference for Languages (CEFR, 2001) CEFR Level B2 worth a further 2 ECTs, on the basis of Law n. 249/2010 (Art. 10, comma 3e) which states that the English Language Workshops are divided over the five-year period, and on completion of the training-path students should have achieved a CEFR Level B2.

In summary, in addition to initial and in-service teacher training, national education policy now defines the recruitment procedures and the conditions of access to the role of infant and primary-school teacher.

### 3 A brief account of the English Language Learning and Teaching Methodology Workshop for the initial University of Florence 2011-12 cohorts

In this section, the ethnographic background to the present case-study - the English Language Learning-Teaching Methodology Workshops (hereafter, ELLTMW) during the first five-years of the newly instituted five-year degree-course in Primary-school Education Sciences at the University of Florence (UNIFI) - is presented. According to Dörnyei (2007, p. 130) the objective of ethnographic research is to describe and analyse ‘the practices and the beliefs of cultures’. In point of fact, ‘culture’ for Harklau (2005) refers to any ‘bounded units’ for example communities, programmes, organizations, language classrooms, other language learning contexts etc. Thus, the approach adopted here is qualitative in nature and is based on ethnography, Action Research, and applied research with contextual experimentation and implementation.

With the activation of the above-mentioned degree-course, following the national entrance examination the number of students admitted to the course in Year 1 and enrolled in the ELLTMW on an e-Learning workspace were 375. The majority of these was students who came from all over Tuscany – on the Tyrrhenian coast from Grosseto to Stanto Stefano di Magro, and inland as far as Maraddi and down to Montepulciano – as well as from other regions of Italy such as Alto Adige, Basilicata, Calabria, Campania, Liguria, Molise, Sardinia, Sicilia, Trentino, though in lesser numbers. This fact is important because from the point of view of the English language competences of the learners we can identify a vast range of differences among learners as regards their perceived competences compared to their actual competences when assessed on an ongoing basis using CEFR criteria and descriptors, during the course of their first year of study as well as in the final 1<sup>st</sup> year examination. (For these cohorts, the subsequent ELLTMW examinations were also based on CEFR criteria).

On activation of the ELLTMW, one of the first things which needed to be done was to obtain as clear a picture as possible of real learner competence in spoken and written English in terms of the CEFR. It was essential to identify if there were problems and understand which competence(s) these problems were related to. Based on the previous experience gained in over a decade of language-teaching within the degree-course in Educational Sciences, in which past students demonstrated serious difficulties in relation to oral competences, it was hypothesized (Research Question (RQ) 1) that this would constitute an area which needed both specific and special attention. Oral Competence (Speaking) is viewed in terms of Spoken Production and Spoken Interaction (CEFR, 2001), as described in the numerous Oral Competence Descriptors). Hence, Oral Competence was the main focus in the action-oriented approach

adopted given that future Primary School teachers need to be able to interact socially in a meaningful way with learners *in* English and *through* English. To this end, the Workshop methodological approach was designed to be as user-friendly as possible, to lower learner anxiety when speaking, and to build teacher-trainee confidence in speaking in both spoken production (SP) and interaction (SI). Based on the number of trainees involved, it was decided initially to proceed with the self-grouping of learners in groups of five (based on concepts in Miller, 1994) with trainees speaking (SP) to all ELLTMW participants briefly about the members in their individual groups. This provided the Workshop Convenor (WC) with an initial opportunity to sample trainee-teacher English oral production, make a tentative initial assessment of oral competence based on the CEFR descriptors, and re-organise groupings so that in each group the level of language competence was heterogeneous with the objective of improving the initial language competence levels of lower-level learners through cooperative and peer-learning initiatives, reflection, project and portfolio work, which became a compulsory part of the learning, teaching and assessment in the ELLTMWs.

### *3.1 Reference documents and tools to develop the ELLTMW curriculum*

The research approach to designing a learner-centred syllabus for Year 1 (and subsequent years) is described hereafter. The basic idea was to think long-term and develop a five-year vertically structured ELLTMW programme, based on the initial investigation of learner competences, and also drawing on elements within both the National Guidelines (2004; 2010; and later 2012) as well as some of the Council of Europe (CoE) reference documents and tools for language-teachers.

With regard to the learner-centred focus, it was necessary to intervene to provide learners with tools to enable them to work at improving their English language competences. To this end, it was decided to use a topic task-based approach working with short news topics of learner interest as well as current affairs/events available online in English both in aural and written text formats. During the twice weekly six workshop sessions, for an overall total of 24 hours, learners worked in their allocated groups with the texts chosen partly by the WC and partly by the individual learners and their groups. This work continued throughout the duration of the workshop and focused on writing short summaries and preparing oral presentations of the tasks completed. Hereafter, in Figure 1, is a sample learner-group reflection and feedback comment on the ongoing workshop and the tasks:

In conclusion, we are very happy to have done this work because in this way we have analyzed many aspects that characterize our society and the world.  
The world is the place where we live and we have to protect it; only in this way we will have a better future and new generations will be full of values.

Fig. 1 - Learners B, C, C, F and G, attending Year 1 workshop

The other major decision taken by the WC aimed at improving learner competences and involved the ad-hoc development of guidelines for an English Language Portfolio. Here, the starting-point was the European Language Portfolio (ELP, 200) already used in a sample of Primary and Secondary Schools in Italy in 2002. Our English Language Portfolio was developed with in-situ modifications based on previous experience gained in related courses. The idea was to provide learners with an efficient tool to enable them to determine their individual language areas of weakness, strength, and those requiring development together with how to put this development in place, and activities related to communicative language competences as well as linguistic competences, self-assessment and reflections. Learners were immediately provided with Guidelines for the Compilation of their English Language Portfolio.

With regard to the identification and selection of official reference documents and tools (i.e. National Guidelines (2012), CEFR (2001), CEFTrain (2003-5), ELP (1991) etc.) to adopt within the ELLTMWs, the starting point for the subsequent decisions taken was the following principal research question (RQ2): What is the role of the English Language Learning-Teaching methodology workshops in ITE in the five-year degree-course in Primary Education? The possible answers to this question can be found in the different versions of the National Guidelines (2004-12), the Competence Profile (2012, p. 10), as well as in the CEFR (2001) which is also the basis for the National Guidelines (NGs). In the NGs (2012, p 37ff.) we find the following output objective:

When meeting people of other cultures [one] is able to express one's self at elementary level in English and tackle basic communication, in simple situations of daily life, in a second European language.

Put succinctly, English language learners in Primary School need to be able to communicate effectively about simple, learner-related everyday interests



and information with speakers of other languages. Essentially, the objective focuses, quite appropriately, on developing oral competence which includes phonological aspects such as pronunciation and intonation, in a plurilingual approach to learning languages in Primary School.

Thus, this further consolidates the objectives identified as regards the ELLTMW, and, thus, confirms the need for a ‘tool’ based on the ELP-concept (i.e. the Individual English Language Portfolio) to help learners to achieve this objective. The indication of levels of competence achievement leads directly to the CEFR tool. In a previous survey on teacher knowledge of the CEFR in the Italian context (Guerin, 2005), it was found that there was a lack of knowledge of this reference document. The study highlighted the need for both language teacher educators and trainee-teachers to become familiar with this CoE document on which the National Guidelines draw, and to which trainees and teachers need to be able to refer as future language professionals when they are called upon to develop L2 curricula and competences throughout Primary Education. Thus, in Year 1, familiarisation with the CEFR reference document was limited to an overview of the same, with a deeper study of the document in the following years. Indeed, the need to be familiar with this reference document is further highlighted by the Ministerial Decree in relation to the National Competition for teaching posts (2016) which requires future Primary School teachers to be at least CEFR Level B2 and be familiar with EU reference documents, as is clearly stated in the Art. 4 of the 2016 national competition for future teachers.

In addition, in order to try to ensure the concept of continuity and quality between learning objectives and outcomes given the underlying link between learning, teaching and assessment (Biggs, 1979), it was felt that future teachers should be made aware of the complex nature and overall implications of language assessment in both their own Higher Education (HE) context, as well as in their role as future language teachers. To this end, the Guidelines of the European Association for Language Testing and Assessment (EALTA) were also used as learner language teaching and learning material. There was also a further reason for using these guidelines. Since language testing and assessment is an integral part of the daily classroom life of language teachers, this is an area in which a major need for specific training in language assessment literacy for both inservice and trainee-teachers on a global scale has been identified in the research literature (Hasselgreen *et al.*, 2004; Guerin, 2010; Vogt & Tzagari, 2014).

Thus, these reference documents and tools began to be introduced and used from Year 1 in simple ways with a dual purpose. This meant using tasks which were considered useful for the learners to improve their communicate language competences in relation to CEFR-level descriptors specifically from

a linguistic competence perspective through receptive (listening and reading) and productive (writing and speaking – SP as well as SI) tasks.

Within the context of the ELLTMWs it is important to highlight the need to work with trainee-teachers on two parallel levels in relation to the CEFR. ITE-trainees, as language learners, are themselves working to achieve at least the CEFR Level B2 in order to be strong Independent Users of the language who can use the difference language competences for their own professional purposes such as e-Twinning, EU projects, professional development, lifelong learning approaches, etc.

On the other hand, at a lower CEFR-level, trainee-teachers need to develop a clear understanding of how to use, adapt, and where necessary, develop, and apply the CEFR Level A descriptors in relation to young learners, their interests and contexts of social experience and interaction in the different infant and primary-school contexts with their specific characteristics.

In the subsequent Years 2, 3, and 4 of the ELLTMWs, the foundation laid in Year 1 was used to consolidate learner knowledge of and familiarisation with the previously-mentioned reference documents and tools by studying a limited number of chapters per annum and using the information therein to reflect on and, then apply a number of key-concepts encountered in the sessions and in the readings through projects. These projects were developed by learners who were grouped by the WC in teams of five-member heterogeneous language competency with members in each team having a range of complementary talents and skills in areas such as creativity, drawing, organisation, leadership, and technology. Teams were constructed in this way so as to build learner confidence and value different individual competences while raising awareness, in each individual, about personal limitations and the need to look to, and work with, others to achieve objectives. From Year 2 onwards, each year a limited number of CEFR chapters were the focus of study (theory) and application (practice) as follows:

Year 2, CEFR Chapters 1, 2, 3 together with reflection about, and basic introduction to, concepts to be encountered in Chapter 4;

Year 3, CEFR Chapters 4, 5, 6 together with reflection about, and basic introduction to, concepts to be encountered in Chapter 7;

Year 4, CEFR Chapters 7, 8 & 9, together with reflection about Curriculum Alignment (Biggs, 1979) and Pluricultural concepts; basic introduction to language and neuroscience.

In our context the objectives to be achieved were the completion of tasks, as well as curriculum development related to the domains and situations which are meaningful and motivational for young learners. Trainees were required to identify, use, and explain the reasons for the strategies used in the approach

adopted. In addition, in Year 3, a further CoE document, the European Portfolio for Student Teachers of Languages (EPOSTL, 2007) was introduced as a reflection tool for trainees to help them plot a lifelong learning pathway with regard to their development of teacher professional competences in learning and teaching languages. Ideally, EPOSTL is a document to introduce at the beginning of ITE, and accompanies trainees throughout their HE period. This is an awareness-raising tool for lifelong professional development and lays the basis for a reflective practitioner. In addition to this reflection tool, ITE-trainees were also introduced to the CEFTTrain online teacher-training Project (Guerin, 2005) which is mentioned among some of the useful resources in the CEFR CV where it appears in ‘a shortlist of some of the most practical guidance documents in relation to exploitation of the CEFR for language teaching and learning’ (CoE, 2018, p. 44). It was used in order to help them better understand concepts related to language-learner profiles and CEFR scales and descriptors, as well as learning-tasks.

In Year 4, the CEFTTrain Project website guided ITE-trainees in planning and developing learner-tasks at CEFR Level A1. Participants also had the opportunity to come into contact with Content and Language Integrated Learning (CLIL) and to begin to get to grips with the language needs of learners in the different discipline-content areas. They were exposed to the different language levels in what Cummins (1999) describes as Basic Interpersonal Communicative Skills (BICS) and Cognitive Academic Language Proficiency (CALP). Learners in their final year of ELLTMWs, as well as degree-candidates also undertook a vertical curriculum development of English for Primary School, as well as CLIL-based projects. The results of these experiences have been presented in a number of degree theses and have offered a wonderful opportunity for the enrichment of learning in ITE.

In concluding this section on the ELLTMWs, it is worth highlighting an interesting learning experience for trainees during the academic year 2015-2016. Both trainees and the WC had two important opportunities to work with two foreign colleagues (one from the U.S. and one from Iraq), as well as share their education and training programmes with other ITE trainees. This experience is further discussed when we reflect on lessons learned in the workshops.

#### 4 Insights gained: limitations

In this section we consider the insights gained during the initial five-year period of this newly-established degree-course. Here, we concentrate on the first two initial cohorts over the first five-year period 2011-16, and we reflect on the information collected during this period which constitutes our primary

source of data.

The main RQs addressed in this study identify current ITE challenges and issues related to the preparation of UNIFI Primary School teacher-trainees to teach English in Primary School. In order to answer the RQs, the study examines the role of the English Language Learning-Teaching Methodology Workshops in Primary Education ITE and its curriculum over a five-year period.

The methodological approach to this research is a longitudinal ethnographical case-study approach which describes the overall findings of the triangulated study. An ethnological longitudinal case-study approach was chosen for the following reasons: (i) ethnography enables the researcher to generate hypotheses about previously unexplored phenomena, permits a focus on the whole picture as well as facilitating a holistic view; (ii) by its nature a longitudinal case-study provides the researcher with the opportunity to study in depth the complexity of the multiple levels of the specific case: (i) the context, (ii) the participants, (iii) the programme. The research method is a mixed-methods qualitative-quantitative one which uses typical sampling (Dörnyei, 2007). A Qual-quant mixed-methods design is used because ethnography requires a variety of investigation methods so as to provide a rich understanding of a complex issue and avoid the limitations of the ‘insider/outsider’ dilemma. Moreover, by combining methods we can achieve (i) a greater understanding of the phenomenon, and (ii) to triangulate one set of data against another and, so, validate the conclusions reached in the research (Creswell, 2003).

We begin our analysis by taking into account the information collected in relation to ITE-trainees and their ITE programme. The data are based on the information gathered from a number of different sources (e.g. individual, group, and outputs) using different information-collection instruments (e.g. as mentioned in the main descriptive part of the paper: observation, audio and video-recordings, specific tools, reflection, questionnaires, interviews, assessment, evaluation) in accordance with the previously mentioned methodological approach.

The overall results obtained from the research undertaken are discussed throughout the rest of this paper.

#### *4.1 Limitations of the study*

The main limitations of the present study can be identified as: (i) the ‘insider/outsider’ dilemma as mentioned in the methodological approach adopted, and (ii) the fact that the study population is limited to the ITE-trainee ‘population’ under study in the context of the ELLTMWs in ITE at UNIFI. To further verify the results of this study it is necessary to undertake ethnographical longitudinal studies in other ITE-trainee contexts and conduct them in a similar manner.

## 4.2 Discussion

The information gleaned from the ITE-trainees derives from three main thematic areas (TAs): (i) Learner-Production (TA-LP), (ii) Learner Reflection Tools (TA-RTs), and (iii) Types of Assessment (TA-TA).

With regard to the thematic area of Learner-Production (TA-LP), our research draws on the oral and written texts produced by the Learners during the course of their ITE. Thus, the information sources for each individual Learner are as follows: English Language-competence and Methodology Portfolios (hereafter, Portfolios), audio-recordings of Learner performances in English during sessions (hereafter, audios), contributions within the Group Project (hereafter, Group Projects), video-recordings simulating a short English-teaching session by the individual members of the group (hereafter, DVDs), and online assignments (hereafter, Tasks).

The procedures followed include the collection, coding and analysis of the information related to individual Learners which is then analysed in relation to the other Learners in the study-context. The methodological approaches used for the TA-LP are both qualitative and quantitative and include textual analysis, process and product evaluation, as well as observation. The information for all learners is summarized in a descriptive manner later in the overall discussion.

For the thematic area of Learner Reflection Tools (TA-RTs), we refer to individual Learner reflections as presented within (i) the Reflection Section of the Portfolio (hereafter, Reflections), (ii) the CoE-European Centre for Modern Languages (ECML) reflection tool for future language educators known as EPOSTL, (iii) the EALTA Guidelines for familiarisation with assessment procedures, (iv) open-ended questionnaires (hereafter, Questionnaires), and (v) observations.

The procedures followed include the collection, coding and analysis of Learner reflections as gathered from the source information related to reflection of individual Learners which is then analysed in relation to the other Learners in the study-context. The methodological approach used for the TA-RTs is qualitative and includes textual analysis, process and product evaluation, as well as observation. The information for all learners is summarized in a descriptive manner later in the overall discussion.

In the thematic area of Types of Assessment (TA-TA) the information sources for each individual Learner are the following five: (i) self-assessment using the CEFR Scales and Descriptors, (ii) diagnostic, (iii) continuous, and (iv) summative assessment procedures, as well as (v) observations.

The procedures followed include the collection, coding and analysis of the information related to the assessment of individual Learners which is then analysed in relation to the other Learners in the study-context. The

methodological approaches used for TA-TA are both qualitative and quantitative and include the analysis of the results derived from the different assessment procedures, as well as Learner and WC co-ordinator observations. The information for all learners is summarized in a descriptive manner later in the overall discussion.

Hereafter we highlight what has emerged from the study in relation to: (i) ITE-trainees and their ITE English curriculum; (ii) some important gaps in the ITE English curriculum under study, with suggestions on what one can do temporarily to address them while awaiting specific intervention measures by the competent authorities.

## **5 Results of the Research Study: Gap-identification, possible approaches with viable solutions**

The overall impact of the ELLTMW-experience was evaluated by triangulating the different data-sets for the three above-mentioned TAs. The descriptive summary of the overall TA results which follows aims to highlight the main research findings and related considerations for this five-year ITE-experience.

Hereafter, we present our overall concluding discussion in relation gap-identification and possible solutions to ITE-trainees and their ITE English curriculum by examining: (i) the lessons learned during the ELLTMWs, (ii) the process of building the curriculum using and applying reference documents and tools in the ITE programme, as well as the importance of so doing, (iii) how the assessment results can inform our understanding of trainees language competence, and (iv) L2-teaching in the ITE training-placement.

### ***5.1 The ITE-trainees and their ITE English curriculum***

In the following section we consider ITE-trainees and their ITE English curriculum. The section examines (i) lessons learned in the initial five-years of the ELLTMWs, and (ii) building the curriculum using reference documents and tools.

#### ***5.1.1 Lessons learned in the initial five-year period of ELLTMWs***

An important background-point to highlight here is that with the initial matriculation years of this degree-course, the ELLTMWs were spread over a four-year period as follows:

1<sup>st</sup> year – 2 ECTS – 24 hours  
2<sup>nd</sup> year – 3 ECTS – 36 hours  
3<sup>rd</sup> year – 3 ECTS – 36 hours  
4<sup>th</sup> year – 2 ECTS – 24 hours.

This distribution over a four-year period meant that those ELLTMW participants who completed the required workshop requirements and achieved the set language-competence levels within the appropriate timeframe, had a lapse of at least a year with English before qualifying and undergoing school induction.

By drawing attention to the fact that the initial distribution of ELLTMWs over a four-year period created a one-year void prior to graduation, the degree-course governing body ratified the distribution of the credits over a five-year period in order to keep undergraduates in contact with English until the completion of their studies. Thus, ELLTMW-participants enrolled in the degree-course as of the academic year 2015-16, will have an ELLTMW worth 2 ECTS for each of the five years of study, as well as a further 2 ECTS for the in-house CLA-UNIFI ‘certification’ envisaged at CEFR Level B2.

When one reflects on the different aspects of the ELLTMWs there are a number of things to consider. The bigger issues which emerge are related to the extremely wide-ranging L2 language-competence levels of the participants. This aspect greatly influenced the manner in which the workshops were conducted. The challenging aspect was to create and work with a syllabus – and later a five-year vertical curriculum, as previously-mentioned - which needed to be accessible to all but at the same time allowed each learner to use and express language in a comprehensible way at the individual’s level while also engaging them in improving their communicative competences. To do so, required a creative approach to finding a solution to the task at hand. This approach meant selecting both oral as well as written texts which, on the one hand, aimed at developing language competences while at the same time facilitating learners to work progressively towards the required exit levels – a journey as diverse as those taking it. On the other hand, the main objective envisaged for ITE-trainees was to prepare them to work with YLs so as to enable the YLs to socially interact by communicating with speakers of other languages of the same age about things immediate to YLs everyday ludic and general activities, interests and needs.

Some of the positive aspects include, first and foremost, the workshops were a hands-on apprenticeship with using L2 as an interaction tool for meaning-making through the use of a communicative approach to language learning and teaching (CEFR, 2001, p. 10) with the emphasis on acquiring language through a learning-in-progress approach which learners documented and

reported, initially, in their personal English Language Portfolios, and later, through the use of ICT outputs beginning with workshop guidelines to develop groupwork using simple thematic powerpoint presentations in Years 1 and 2. The bar was raised in Years 3 and 4. At this stage in their ITE, trainees continued to work as in the previous two years, but now they were required to start to use the reference documents and tools as professional tools to start to reflect and to develop materials to work creatively with YLs in the classroom using the activities, interests and needs which are meaningful for YLs (CEFR, 2001; CEFTrain, 2003). In addition, ITE-trainees were also required to become familiar with EPOSTL and to start to use it as their lifelong-learning teaching and learning reflection portfolio.

By targeting the YL aspect of the programme, this had advantages and also produced some interesting surprises. Some of the advantages of the approach adopted include the following: (i) it was a discrete, accessible and motivating way to work with lower-level L2 trainees who felt the language and activities were within their grasp; (ii) it engaged and motivated trainees as the activities were seen to be directly related to their role as future L2 teachers; (iii) it challenged learner-trainees to be creative in their work; (iv) it promoted the idea of teamwork and the taking-on of competence-based roles within teams – a role teachers need to be able to play in the school-context; (v) it encouraged trainees to be more independent as future teachers and, thus, rely less on standard commercial texts which at times lead to a grammar-focused approach in L2 classrooms; (vi) it helped learners to reflect on their own learning (Schön, 2003) and identify their own individual learning needs – a forerunner process for their future professional role as teachers who need to enable learners to reflect on their own learning-in-progress and identify learning strategies (Pinter, 2007); (vii) it provided the opportunity to be engaged in and with the language through the L2; (viii) it created opportunities for trainees to begin to develop phonological awareness and competences (Guerin, 2017); (ix) it introduced an anxiety-free, non-threatening, learner-friendly environment in which learner-mistakes informed WC practices to promote the facilitation of learner-focused L2 acquisition; (x) it facilitated learners in the area of lexis development which is not always given appropriate attention despite its importance for progression in and to different competence levels; (xi) it promoted the development of phonology awareness lesson plans, and (xii) laid the basis for the promotion of a vertical language curriculum for English in primary-school (Guerin, 2016).

The surprises included some unexpected aspects: (i) higher-level language learners lacked the appropriate lexis to work in a motivating way with YLs; (ii) it was extremely difficult for higher-level language-learners to rethink their language use in terms of YLs; (iii) at times, higher-level language-learners



underestimated difficulties that might be encountered in learning contexts and this had an impact on their language-scaffolding approaches.

These ‘surprises’ were useful for the WC to reflect for workshop evaluation purposes, and build-in appropriate scaffolding (Bruner, 1983) in that and in following workshops. The overall ELLTMW experience is extremely positive and fruitful both from methodological and research perspectives, as well as for learner-perceived training benefits related to future English teaching in primary school.

As mentioned above, trainees had interesting learning experiences during the academic year 2015-2016. Both trainees and the WC had two important opportunities to work with two foreign colleagues (one from the U.S. and one from Iraq), as well as share the UNIFI language education and training programme with some American trainee-TESOL teachers.

Thanks to a Fairfield University (CT, USA) collaboration initiative, a research-study with a colleague from the College of Education, Providence College, Providence Rhode Island (R.I., USA) was made possible since Providence had some students engaged in a practicum experience in Florence primary schools. We were both able to present and compare the ITE programmes in detail as well as share sample work within each programme. In addition, trainees from both programmes also had opportunities to meet, discuss, and reflect on the different programmes and compare and contrast them with each other.

In the second experience, the Iraqi colleague from Ibn Rushd College of Education, Baghdad University participated directly in the ELLTMW sessions, and interacted with trainees in workshop sessions (as well as in the regular English language courses provided for students of this degree-course in the form of ‘letturato’). In this way, trainees had the opportunity to learn from the Iraqi colleague about the state-of-the-art of Iraqi ITE and their undergraduate English language competence. They were introduced to what happens in ITE programmes in English Language and Teaching Methodology at Baghdad University. Trainees became aware of the UNESCO National Support Strategy (2012) to strengthen and improve the Iraqi ITE programme which, according to a 1989 report from the Iraqi Ministry of Higher Education and Research. Unfortunately, this report seems to mirror the current educational situation for a series of reasons beyond the scope of the present paper. It identified EFL-teacher professional performance as generally unsatisfactory and judged ITE graduates and inservice teachers as being rather incompetent in their language and teaching skills. Our trainees also learned about the initiatives underway in Iraq to try to address the major issues identified above. Moreover, the shared the issues and complexities of the general Italian context with our Iraqi colleague in discussion and Focus Groups.

In addition to the Ibn Res collaboration, another study was undertaken to gather trainee-teacher perceptions of their training-programmes. This study was limited to a sample of Iraqi student-teachers at the College of Education, English Department, at Ibn Rushd College of Education, Baghdad University, and 4<sup>th</sup>. year Italian trainee-teachers from the degree-course at our University. The study also evaluated the University programme at the colleges of Education in Italy from the perspective of teachers in terms of the ELT and TESOL standards, as well as CEFR levels and descriptors.

The two above-mentioned opportunities to share and compare ITE programme approaches and curricula provided an insight for our ITE- trainees into the reality of ITE in very different social and cultural contexts. Reflections on this experience can provide useful opportunities for professional growth as well as a deeper understanding of the complexities involved in learning and teaching a language at all levels, but more especially, in the Primary Education context when working with young learners. It is important to remember that ITE also involves being able to relate and interact with people from very different cultures compared to one's own culture and society in a pluricultural manner.

### *5.1.2 Building the Curriculum using Reference Documents and tools*

The benefits of adopting the Reference Documents and tools introduced into the ELLTMWs and used as learning tools with trainees are briefly discussed hereafter. The reference documents taken into consideration include the: ELP, CEFR, EALTA Guidelines, CEFTRain, EPOSTL, and the Italian National Guidelines. In addition we also consider the learners' individual English language portfolio (IELP).

It should be pointed out that there are a number of other useful resources to assist teacher educators as well as teacher to implement the CEFR in their teaching and learning contexts, as indicated in the recently published CEFR Companion Volume (2018, p.44).

#### **ELP**

The ELP (1991) was a useful tool to introduce ITE-trainees to the concepts of a language portfolio and to the CEFR as a reference document. It was the basic building-block on which the UNIFI IELP was developed based on UNIFI ITE-trainee language development needs. It was also useful to help future primary-school teacher to reflect on how to use this tool in different classes in Primary Education.

#### **CEFR**

This is a document which for L2 lower-level competence ITE-trainees

can prove difficult to understand and, therefore, apply. However, by working through the text, dividing it into ‘digestible chunks’ and referring to it and applying it over a number of years in the ITE-syllabus significant results can be achieved. Given that the CEFR (2001) was conceived of as a reference framework for adult Learners, within the ELLTMW-experience it was necessary to refer to the descriptors with the Band-Level A1 in order to adapt these to YLs in the primary-school context (Guerin, 2017). This experience provided the opportunity for ITE-trainees to immerse themselves in the real-life task of identifying language learning descriptors related to a specific domain and to specific YL-centred interests and situations. In this way trainees were put in the position of learning how to understand the role of a descriptive reference document and how to adapt such a text to their professional needs and contexts.

### **CEFRTrain – Common European Framework of Reference for Languages in Teacher Training**

The CEFRTrain Project (2003-5) was a transnational initiative supported by the European Commission Socrates Programme Comenius Action with partner institutions from Finland, Austria, Germany, Italy and Spain which aimed to promote common European principles and standards in teacher education as expressed in the CoE reference document the CEFR (2001). Within the CEFRTrain Project, the training materials which were developed to promote the teacher familiarisation process with the CEFR principles, scales and descriptors were informed by the needs identified in a survey carried out among teachers, teacher educators and teacher-trainees in the participating countries (Guerin, 2005; 2007).

These familiarization ([www.helsinki.fi/project/ceftrain/index.php.73.html](http://www.helsinki.fi/project/ceftrain/index.php.73.html)) and training ([www.helsinki.fi/project/ceftrain/index.php.84.html](http://www.helsinki.fi/project/ceftrain/index.php.84.html)) materials proved to be a using tool for ITE-trainees to start to come to grips with basic CEFR concepts and their operationalisation so as to be later able to implement CEFR concepts into their language teaching practice.

### **EALTA Guidelines for Good Practice in Language Testing and Assessment**

The EALTA Guidelines (2006) proved to be an important stepping-stone to introduce trainee and inservice language teachers to basic concepts, principles, and practices associated with language testing and assessment in order to prepare them to reflect seriously on different testing and assessment practices and purposes. This was important for ITE-trainees as language-learners, and, more importantly, it raised awareness of ways and reasons for using assessment in their future professional roles as teachers of English in Primary Schools

in a European context of education, learning and assessment. The theme is further addressed in CEFR (2001, p. 177-196), as well as in other texts (e.g., the Manual, 2009).

### **EPOSTL**

The use of the EPOSTL (2007) provided an excellent opportunity for ITE-trainees to reflect upon the competences acquired and to what extent. It also enabled them to plan the learning journey to be undertaken in terms of lifelong-learning experiences. Use of this learning tool together with reflection thereon enabled us to identify areas through which to improve this meaningful learning tool. However, this is beyond the scope of the present paper.

### **National Guidelines for the Curriculum**

The reference to and use of the NGs in applied learning-contexts was essential in order to introduce trainees to essential school reference documents within the Italian educational system. It provided the opportunity for trainees to understand, interpret and apply concepts therein. Moreover, in relation to English in Primary School, it put trainees in the situation of having to interpret general guidelines in the context of the more detailed and specific CEFR levels and descriptors, and, on occasions, it demanded that learners interpret, adapt to context and even pilot descriptors for their specific learning-teaching contexts. This involved a ‘thinking-outside-the-box’ approach by trainees.

One of the most important aspects which emerged from Learners in relation to the use of these professional documents was that if Learner language-competence levels are not previously consolidated at a minimum of the CEFR Level B2, Learners will, very probably, face great difficulties when trying to understand and interact with some of the texts. This also implies they will encounter difficulties when they try to apply theoretical aspects in real-life contexts since they will probably not have had sufficient time to ‘digest’ certain concepts and make them part of their professional process. In other words, what Altet (1994) refers to as the ‘professional’ position of the Learner in the relationship between theory and practice (i.e., knowledge which results from distancing oneself from the context and reflecting on the action taken and supports the identification of the meaningful nature of the action) is missing.

### **INDIVIDUAL ENGLISH LANGUAGE PORTFOLIO**

A Learner’s individual English Language Portfolio is a competence- building and reflection tool which is an integral part of lifelong learning. In our specific context, what emerges, in hindsight, from the English Language Portfolio work produced by the learners in this area is the awareness or lack of awareness of language learners as to the relevance of a language portfolio in contributing to

building language competences. Though beyond the scope of the present paper, it is important to underline the fact that an analysis of the English Language Portfolios submitted for assessment reveals the different attitudes, approaches, and understanding of the purposes of this education tool. This finds a parallel in what occurred with the introduction of the European Language Portfolio (ELP) in the Italian school context (2004) with the introduction of the Competence portfolio). In short, it was too much extra work and its ‘learning to learn’ nature was not always fully appreciated or really understood by all learners. In cases this led to a ‘so why bother to invest in it’ attitude by a cross-section of learners when it required such commitment, investment, and workload. Unfortunately, it would seem that even in Higher Education (HE) settings, some of the learners who would most benefit from the use of this ‘learning-in-progress’ tool decide to shirk their responsibility in their learning process, consider commitment to language-learning too much of a ‘workload’ and fail to prepare meaningful portfolios for themselves. Ironically, side-by-side with these superficial-style learners, a further two types of learners emerge: those who recognise their need to learn (i.e., aware and responsible learners) as well as the deep learners who strive for excellence in the preparation of their portfolios.

We now turn our attention to the discussion of some gaps identified in the ITE English curriculum under investigation and ways in which these gaps might be addressed.

## *5.2 Some Gaps Identified and Possible Solutions*

In this section we look at some gaps identified within the UNIFI ITE Curriculum Gaps in relation to trainee English language competence levels in the ELLTMWs as well as in the training-placement and possible ways to tackle them. The section is divided into: (i) how language assessment results inform us about trainee’s readiness to teach English, and (ii) L2 and the ITE-trainee school training-placement.

### *5.2.1 How assessment results inform trainee L2 competence teaching ‘readiness’*

In summary, it seems important to inform the reader that the initial assessment of the ITE-trainees English oral competence-levels was wide-ranging, as expected from the wide basin of both geographical origin and the type of secondary education received, together with the differences in the number of years of study of the language. Initial investigation through classroom and homework task activities indicated that listening, reading and writing competences were generally weak. Moreover, the vast majority of learners were initially identified as being within the lower CEFR Levels A1-

A2. This was confirmed in the 1<sup>st</sup>. year examination sessions. For example, in Figure 2, we can see that of the 90 candidates who, in a given period, sat the written examination based at CEFR Level A2, 21 candidates achieved a score of 75%.

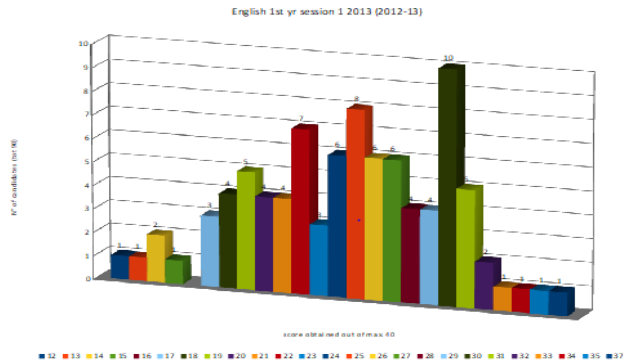


Fig. 2 - Sample of written examination results for a 2012-13 year group of Learners

The data for these same Learners is confirmed by the low number of Learners competent to sit the criteria-based 4<sup>th</sup>. year workshop examination and the results they achieved. Furthermore, assessment by a different university ‘actor’ confirms Learner difficulty in achieving the required CEFR Level B2 of English in a computerized-test of partial competences which addresses reading and listening.

It is important to remember that competence refers to being properly qualified to perform an activity, task or job function. This *competence* is recognized and verified by a particular community of practitioners. Hence, a competency refers to the way that a state of competence can be demonstrated to the specific community. This involves the individual’s knowledge of a related theoretical and/or experiential knowledge-set(s), as well as skills and attitudes which enable an individual to effectively perform the activities related to a given professional role so as to, at a minimum level, meet the expected standards related to a particular professional role. Indeed, in terms of critical pedagogy, a competence-based education can be defined as a form of education which is the result of a curriculum based on an analysis of a prospective or actual role in modern society. Furthermore, a competence-based curriculum purports to certify Learner progress on the bases of demonstrated performance in some or all of the aspects of that role, *independent of the time required to achieve the competence*. This was the rationale behind this specifically developed overall ELLTMW curriculum.

With regard to language assessment implementation, a word of caution is necessary. It is essential for language assessors to realize that the CEFR Levels are levels of excellence which need to be *achieved* using a criteria-referenced approach before a specific CEFR-level can be certified as achieved by competent bodies. Thus, the distinction between criteria-referenced and norm-referenced approaches to assessment need to be made manifest to ITE-trainees as well as to any other WCs that might, at some later stage, work within ITE degree courses in order to avoid misinterpretation of competences by both Learners and those assessing their language competences. Failure to address the important distinction between criteria-referenced versus norm-referenced assessment practices and procedures can give rise to important washback. Such washback Wall (2012, 79) states:

[...] can either be positive or negative to the extent that it either promotes or impedes the accomplishment of educational goals held by learners and/or programme personnel.

This is an important fact to consider whether ELLTMWs adopt a system of ‘marks’ or ‘pass/fail’ based results.

From a totally different perspective, approaches to general assessment in ITE also need to examine trainee ‘readiness’ to teach L2. Here, the discussion becomes wider as in HE educators need to use diagnostics to inform actionable changes. At an optimum level, this requires a system of excellence to be put in place whereby a constructively aligned curriculum (Biggs, 1979) is enacted. This is what was put in place in this specific ELLTMW-experience during this five-year period.

Perhaps the most important fact that emerges from the enactment of this experience is the need to develop Learner language-competence levels based on CEFR level criteria prior to proceeding to the ELLTMWs in, at least, the final three-years of the degree-course. From the experienced gained, we are now in a position to report that, in our context, the CEFR Level B2 certification is envisaged within the 3<sup>rd</sup>. Year. Moreover, as a result of the identification of the low CEFR-level competence of Learners, the current President of the degree-course has implemented measures to consolidate ELLTMW-participant language competence, since this can also impinge on issues related to the ITE training-placement, as we can see in the following section.

### ***5.2.2 L2 and the ITE training-placement***

Briefly, the major gap identified in this specific ITE training-placement seems to be the opportunity for ITE-trainees to engage in an actual training-

placement for the teaching of English in primary-school. Based on responses from trainees, it would appear that only a tiny number of trainees has the opportunity to observe teachers of English in action in the classroom. The number of trainees who have had the opportunity to actually engage in 'teaching' English is even tinier! Reading between the lines, the information which emerges from what trainees report in their methodological portfolios, as well as through questionnaires and interviews, is that occasionally some trainees: (i) can 'mutely observe' English classes in Primary Schools; (ii) can 'collaborate with the English teacher' and if very lucky get the chance to 'do a lesson' which is previously 'approved' by 'THE TEACHER'. It is (iii) much more unlikely, that trainees have the opportunity to actually 'conduct a lesson' usually approved before it is enacted, and (iv) it is much less frequently, that trainees can actually do a lesson in total freedom i.e. manage class and do as one wants without interference during the lesson, followed by host-teacher discussion afterwards.

In an effort to tackle this real-world problem, the individual and group project to enable YLs to build confidence and develop the use of simple English, was introduced by the WC. ITE-trainees had the opportunity to work on their projects during their ELLTMWs for a number of sessions under the guidance of the WC and get feedback. During these sessions, ITE-trainees were able to draw up and confront ideas, as well as choose the relevant approaches to materials production, as well as identify the hands-on approach for their projects. They did so in their teams and also discussed ideas, approaches, materials, and related issues with the WC.

This problem-solving approach to L2 project development enabled all ITE-trainees attending these workshops to come face-2-face with the learning and teaching *process* through the reflection-development-production cycle of tasks involved in developing a lesson and putting it into action, in the scaffolded ELLTMW-context. The end-*product* was a DVD containing the lesson plans, lesson materials, and, most importantly, a video-recording of the ITE-trainee group in which each member put into practice a part of the 'lesson-in-action', at least virtually.

In Figure 3, we see a sample of an ITE-trainee English teaching group project cooperation grid for the development of learning material.

On the basis of the fact that, in this specific context, the opportunity to actually experience the English language classroom *in vivo* seems almost non-existent in their training-placement for the majority of ITE-trainees, to this end, the workshops tried to address the above-mentioned issues. The following images (Figures 4 and 5) offer examples of the ITE-learners sample English teaching project outputs.



**Our-Talking-Book-Project**

Group name: *Angels Plus One*  
 Group symbol: *Saxox/Ukulele*

The members of my group are:	GM	EP	AP	SR	IS
Things they like most about the project-groupwork:	The atmosphere created by the group. The song we wrote.	The bond born between the members of the group. Creating the activity, drawing and making photos.	Spending some time with the group. Writing the story and the song.	Have time to meet people with who I hadn't a lot of confidence. Spending time with my friends. Have fun to draw.	Having a good time with people I didn't know before. Writing the story. Drawing.
Things they like least about the project-groupwork:	Finding the right place to make the video.	Finding the right place to make the video.	Finding the right place to make the video.	Finding the right place to make the video.	Finding the right place to make the video.
Individual qualities that make them a good group member:	Creativity, manual ability, being able to organize things.	Ability with technology.	Musical ability, creativity.	Creativity, language ability, leadership ability.	Drawing ability.
Individual qualities that make them a bad group member:	Have many commitments so it's difficult to find a day to gather the group.	I'm not very on time.	I'm not very good at drawing.	Hard to force myself to do much on others.	I'm not very patient.
What mark (out of 100) does each individual want to get for this assignment:	90	90	90	90	90
Individual contact information: e-mail: Mobile-Ph.:	removed	removed	removed	removed	removed
Individual special area of excellence/contribution to group:	organization	technology	reflections	leader	drawing

Fig. 3 - Sample ELLTMW Teamwork Guideline for a YL L2-Learning Project



Fig. 4 - Sample extract of 4<sup>th</sup>. year participant Story-illustration: C, B & Ce.

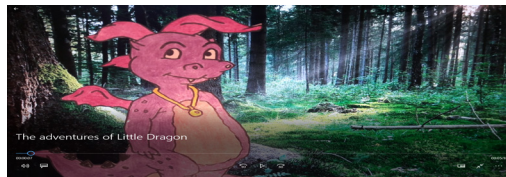


Fig. 5 - Picture Books and Story-telling by 4<sup>th</sup>. Year participants: A, B & L.

ITE-trainees also needed to continue to work on their projects after the ELLTMWs had ended. Learners who realized the importance of this training opportunity worked professionally on the end-product. A limitation of the approach adopted by the WC is that this learning-teaching project required a lot of time that not all participants could or wanted to invest. Reasons for this included ITE-trainee language competence levels, the surface-learner approach to the ELLTMWs, time-pressure from the overall degree-course attendance, and training-placements. Despite these drawbacks, many ITE-trainees put a lot of enthusiasm, energy, and reflection into their project-work and achieved

very good results in what they produced.

In the following section, we draw our final conclusions in relation to our research.

## Conclusions

In this paper we began by examining a number of important contributions from the research literature related to language teaching and learning in order to pinpoint the current challenges and issues as they emerge through ITE in the preparation of trainee Primary School teachers with specific reference to the ELLTMWs and how to approach the teaching and learning of English in Primary School. What emerged overall in our context is a general concern about the inadequacies of ITE to provide future teachers of English with the opportunity ‘on the ground’ to link theoretical and practical aspects of their learning so as to apply it in a meaningful way for their learners in the classroom-context, as is essential in ITE.

Other important issues which emerge include the need for teacher: (i) professional lifelong-learning given that society places a growing number of requirements and responsibilities on teachers; (ii) reflection on practice; (iii) awareness of social and cultural dimensions of learning; (iv) familiarity with national, EU, and international education policies as well as reference documents and tools; (v) ability to cooperate with other teachers and staff-members to improve and promote a learning society; (vi) awareness of the complex nature of teaching and learning, as well as of the school environment.

We then examined the role of the English Language Learning-Teaching Methodology Workshops (ELLTMWs) in ITE and how these ELLTMWs were implemented over a five-year academic period for the first two ITE-cohorts within the Degree Course in Primary Education in this specific University context. This was followed by a brief account of the specific development of the ELLTMW methodology curriculum within the degree-course, and information regarding the use of Council of Europe and national (National Guidelines, 2012) reference documents and tools for language teachers. We also presented our collaboration with international colleagues within ITE-trainee ELLTMWs and reflected on these opportunities to broaden our perspectives on learning in different contexts.

The results of the study pinpoint the initial English Language teacher-training gap. What was done to address the issue is briefly presented. We identify possible future directions and issues (e.g. ITE-trainee English language competences) which, at least in the specific context examined, appear to be of major importance since, said issues, also have a profound impact on teaching-learning contexts. If they are to be resolved in a productive way both for pre-

and inservice teachers as well as their learners, these issues demand meaningful and effective actions and initiatives by policymakers, ministerial authorities, initial teacher educators, and other stakeholders.

In general terms, what clearly emerges from this study is that ITE and induction, together with lifelong-learning development strategies, could offer better learning opportunities when they are: (i) centred on practice, (ii) involve engagement with authentic teaching contexts, (iii) include reflections on experiences, (iv) experience action-research practices, and (v) encounter ongoing in-field experiences in the professional workplace.

Last but not least, Dewey (1938, p. 25) holds that all meaningful learning is grounded in experience i.e., ‘all genuine education comes about through experience’. He further maintains that experience alone is insufficient. What is required is careful, disciplined and purposeful thinking about that experience in search of meanings (i.e. reflections) that can be carried forward to future experiences so that it becomes *educative*. These perspectives are important reference points to be kept in mind and put into practice especially in ITE approaches.

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# ONLINE TESOL TEACHER EDUCATION: OUTCOME OF A PILOT PROJECT

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The increasing use of English throughout the world has seen the growth of career opportunities for teachers of English as a second language (ESL). In fact, there is a widespread demand for teachers with up-to-date qualifications in TESOL (Teaching English to Speakers of Other Languages). In addition, as teacher training is increasingly migrating from on-ground to online classrooms, there is a need to reach out to as many TESL teachers worldwide as possible. In fact, online education is expanding access to students internationally and domestically to students who would otherwise be unable to attend college (Christensen *et al.*, 2011; Simpson, 2013). In this perspective, then, the online TESOL certificate program at Lesley University, Cambridge, MA aims at creating international partnerships with overseas teachers and promote the course. This article reports on the outcome of a pilot project that involved opening the online course<sup>1</sup> to an Italian partner.

<sup>1</sup> i.e. Internet-based courses that are offered synchronously and/or asynchronously

for citations:

## 1 Introduction

The globalization phenomenon is having an impact on Internationalization of education in every corner of the globe. This naturally has an influence on education in general and in particular at the University level which is undergoing a paradigm shift in how information and knowledge are transferred. Likewise, for post-degree specialization and training programs. The migration from on-ground to online classrooms has expanded rapidly over the past decades and continues to represent the fastest growing sector of higher education (Allen & Seaman, 2013). In fact, online courses are proliferating at an incredibly fast pace. This is because Online courses can reach anyone anywhere anytime. Thus, online education not only gives access to students internationally but also domestically to those who would otherwise be unable to attend college (Christensen *et al*, 2011; Simpson, 2013).

Moreover, technology has become an integral part of learning and teaching and teachers should receive the necessary training and support to use computers in their classrooms. David Warlick<sup>2</sup> (2006) contends, “We need technology in every classroom and in every student and teacher’s hand, because it is the pen and paper of our time, and it is the lens through which we experience much of our world”. More importantly, “When future teachers *learn* with technology before *teaching* with it, they are able to experience technology from the students’ point of view and thereby evaluate its uses and benefits from a user perspective” (Arnold & Ducate, 2006, p. 42). Thus, an online teacher-training course could be considered an important initial step in preparing language teachers for effectively incorporating educational technology into their own future teaching contexts.

In addition, in 2014 Lesley founded the Global Education Center. Among its goals, increasing collaboration with international faculty is one major objective of the center, along with “Internationalizing” curriculum. In fact, it aims at cultivating a community of scholars with the skills and understanding to be compassionate and engaged world citizens as well as globally astute professionals. It is the hub of collaborative and innovative learning. The Center’s mission is to advance international engagement across schools and programs at Lesley and with partner institutions. The Center also serves as a meeting point for the Global Faculty Fellows. Finally, it sponsors the *Scholars without Borders* scholarship fund and events that extend into the classroom and community.

In keeping with the above international perspective, the Online Tesol teacher education program at Lesley University experimented with extending the program to an Italian partner. Opening the Tesol course to pre-service and in-service English teachers in southern Italy on a trial basis gave us the oppor-

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<sup>2</sup> URL: <http://2cents.onlearning.us/?p=420>



tunity to create international partnerships, promote the course and evaluate its effectiveness.

## 2 A brief background of CMC technology

CMC (Computer Mediated Communication) technology is a valuable and widely used educational tool due to certain inherent features of the medium, which affect and shape participants' interaction. It lends itself to instruction based on sociocultural principles. As Vygotsky (1978) suggested and further researched by other scholars, learning takes place in a social environment and is facilitated by dialogue (Adair-Hauck & Donato, 1994; Anton, DiCamilla, 1998; Coughlin & Duff, 1996; Warschauer, 1997; 2000). ACMC (Asynchronous Computer Mediated Communication), used in the current study, provides a time lapse between reading a posting, formulating a reply, revising it, and finally sending it. This lack of time pressure allows extra time for reflection (Garrison *et al.*, 2001; Meyer, 2003) and internalizing the new jointly constructed knowledge. This is not always possible in a fast-paced traditional classroom environment. Discussion boards in fact provide an interactive virtual space where language teachers can reflect, evaluate, solve problems or simply exchange ideas (Bonk *et al.*, 1996; Kumari, 2001; Pawan *et al.*, 2003). Thus, the participants are involved in a collaborative learning process that uses scaffolding tools (like providing hints, explanations, prompts, suggestions, etc.) to facilitate learning and above all encourage learner autonomy, teamwork and critical thinking.

CMC has been implemented in teacher training and education courses in a number of ways, such as, discussing teaching scenarios (Bonk *et al.*, 1996), engaging students in discussions with experts (Lomicka & Lord, 2004), reflecting on teaching experiences and observations (Liou, 2001), collaborating and providing feedback on group projects (Curtis & Lawson, 2001), and promoting group problem-solving skills (Kang, 1996).

The fact that ACMC does not provide participants with immediate feedback from their peers and/or teacher may be perceived as an apparent drawback of technology. However, it can also be a pedagogical advantage since this encourages the interlocutors to write clear, concise messages to convey the intended meaning (Koschmann *et al.*, 1996; Meyer, 2003). Nguyen (2008), referring to Ingram and Hathorn (2004, p. 28), states that “while synchronous discussions may be best suited for brainstorming and quickly sharing ideas during interaction, asynchronous exchanges allow more time for considered opinions and are more effective for deeper discussion of ideas”.

Studies show that ACMC has been successfully implemented with different cognitive benefits. Interactions via E-mail or discussion boards often include

dynamic information exchanges (Kanuka & Anderson, 1996; Pawan *et al.*, 2003), which display in-depth processing (McKenzie & Murphy 2000) and critical thinking (Liou, 2001; Newman *et al.*, 1995). In addition, reading one another's comments, ideas and experiences also exposes students to multiple viewpoints (Mitchell, 2003) and helps to expand students' knowledge and deepen their understanding (Gunawardena *et al.*, 1997; Mitchell, 2003). Moreover, building on each other's ideas (Pawan *et al.*, 2003) and learning from each other (Sengupta, 2001) often result in co-construction of knowledge (Kamhi-Stein, 2000; Pena-Shaff & Nicholls, 2004).

Besides the cognitive benefits mentioned above, APMC has also shown a positive social impact. Asynchronous electronic exchanges seem to foster the building of a learning community, where participants offer each other support and praise (Cole *et al.*, 1998; Sengupta, 2001). Although some experts argue that the lack of social context cues such as smiling or nodding makes APMC a reduced register (Ferrara *et al.*, 1991), less social cues often lead to greater equality in participation than in traditional classrooms (Kang, 1996; Warschauer, 1997) further contributing to the social network of the APMC community (Arnold & Ducate, 2006).

All these findings illustrate how “CMC creates the opportunity for a group of people to construct knowledge together, thus linking reflection and interaction” (Warschauer, 1997, p. 473). Hence, in view of the above, CMC seems to be very appropriate for promoting the kind of student-centered learning that is central to the sociocultural theory of learning and teacher education.

### 3 Description of Lesley's Online TESOL program

The graduate TESOL certificate program was launched in 2012. A team of eight professors from the TESOL and Bilingual Education Department, along with a professor versed in online education, met monthly to develop the suite of courses. Support was also provided by the librarians to develop a course guide with video links, and the eLearning and Instructional Support (eLis) department helped with all technical aspects of online course development. Four of these courses had previously been taught on campus or off campus in a hybrid model. Thus, the instructors were tasked with creating discussion forums, power point lectures, and final assignments from their former syllabus.

Table 1 below illustrates the courses set up to fulfill the certificate program.

Table 1  
PROGRAM OF STUDY IN FULFILMENT OF THE TESOL CERTIFICATE (A.Y. 2014-2015)

Course Type	Credits
EECLD 6001 Culturally Responsive Teaching	3
EECLD 6002 Essential Linguistics: What Every Teacher Needs to Know about Language	3
EECLD 6004 First and Second Language Acquisition and Oral Development	3
EECLD 6007 Teaching English to Speakers of Other Languages: Literacy and Literature <sup>3</sup>	3
EECLD 6010 Teaching English to Speakers of Other Languages: Content Areas	3
EECLD 6012 Assessment for Equity and Inclusion of CLD Learners: Linguistic/Cultural Differences and Disabilities	3
<b>TOTAL CREDITS</b>	<b>18</b>

Students must complete the 6 required courses, 3 credits each. However, in order to complete the TESOL program, students must submit evidence of minimal proficiency in a foreign language, equivalent to one semester's work of approximately 45 class hours. The maximum course enrollment is 15 students.

This 18-credit graduate certificate, which meets endorsement requirements in multiple US states, is designed to enhance the knowledge, skills, and dispositions of licensed teachers who wish to teach ELL (English Language Learner) students. It offers a theoretical foundation as well as practical strategies for the classroom and empowers teachers with the most current technologies, research-based strategies, and culturally responsive teaching. It is aligned with TESOL/ National Council for Accreditation of Teacher Education (NCATE) National Standards in the five domains: Language; Culture; Planning, Implementing, and Managing Instruction; Assessment; and Professionalism (see paragraph 3.1).

Blackboard serves as the learning management system for this online course. This platform gives students a place to interact, serving as their own learning environment. Multiple resources, including Blackboard IM, Kaltura, and Voice Thread can be added to increase collaboration in a virtual environment.

<sup>3</sup> Developed by D. Bardetti. A hands-on course dedicated to using outcome-based TESOL standards in multilingual /multicultural context for teaching reading, writing, and spelling in English to Culturally and Linguistically Diverse (CLD) students who are at different levels of English proficiency. Teachers acquire, evaluate, adapt, and develop materials that are responsive to the language proficiency level and cultural diversity of students in a classroom that fosters critical thinking skills and respect for all.

### 3.1 Aim and proposed outcome

The expected outcome for graduates of Lesley's TESOL programs is *learning to teach effectively to all children*. Since one of the goals is for graduates to be well prepared to teach all students effectively, a system has been developed that tracks students' progress in their graduate program, so as to ensure continuous improvement. Key assignments, which address competencies linked to state and professional standards, have been developed for every program course, and professors give students prompt and constructive feedback on their progress based on these assignments. The expected outcomes are aligned to TESOL/NCATE standards (National Council for Accreditation of Teacher Education) and fall under the following five domains<sup>4</sup>.

#### **Domain 1. Language**

Standard 1.a. Language as a System

Standard 1.b. Language Acquisition and Development

#### **Domain 2. Culture**

Standard 2. Culture as it Affects Student Learning

#### **Domain 3. Planning, Implementing, and Managing Instruction**

Standard 3.a. Planning for Standards-Based ESL and Content Instruction

Standard 3.b. Implementing and Managing Standards-Based ESL and Content Instruction

Standard 3.c. Using Resources and Technology Effectively in ESL and Content Instruction

#### **Domain 4. Assessment**

Standard 4.a. Issues of Assessment for English Language Learners

Standard 4.b. Language Proficiency Assessment

Standard 4.c. Classroom-Based Assessment for ESL

#### **Domain 5. Professionalism**

Standard 5.a. ESL Research and History

Standard 5.b. Professional Development, Partnerships, and Advocacy

## 4 Expanding the Language and Literacy module to Italian partner

One module, precisely, Language and Literacy<sup>5</sup> was made available to the Italian partner<sup>6</sup>. The TESOL teacher educator based in Italy was added to the course as Teaching Assistant (TA) for the module. In addition, three Italian pre-service teacher trainees and three Italian in-service teachers were given access to the course as guests. Their participation was invaluable in terms of

<sup>4</sup> For a more detailed analysis of each one, refer to <http://www.lesley.edu/english-language-learners/program-outcomes/>

<sup>5</sup> Deana Bardetti, Course Mentor and Instructor, based in US

<sup>6</sup> Serafina Filice, Assistant Professor, based in Italy

final course evaluation as we shall discuss below.

On the average, approximately 80% of the students enrolled reside in New England. Approximately 50% live in the Boston/Cambridge area. In general, about 20% are US residents who are teaching English abroad (for example, in Turkey, Peru). The 14 students (12 female, 2 male; average age being 28) in this specific online class (Spring, 2015) were in fact all living in Massachusetts near the university; they were native English speakers except for two students who were bilingual Spanish/English, and had moved to New England as adolescents from the Dominican Republic and Puerto Rico. The Italian partner added a European perspective to the existing American-based course. In fact, the Italian TA posted extra reading resources on the platform, and provided input from a different reality, thus extending the outlook and giving it a more international dimension.

The module spanned an 8-week period for a total of 45 hours of student workload. Each weekly session was organized with a different focus:

- Session 1: Foundations of Literacy Instruction
- Session 2: Promoting Emergent Literacy
- Session 3: Vocabulary Development
- Session 4: Process Writing
- Session 5: Reading and Literature Instruction
- Session 6: Connecting Reading and Writing
- Session 7: Culturally Responsive Literature
- Session 8: Students with Interrupted Formal Education (SIFES)

The introductory session begins with a thorough review of essential research, including the National Literacy Panel Report on developing second language literacy in language-minority children and youth (August & Shanahan, 2006). Sessions two through five highlight stages of literacy development and strategies to support students at each level of language study. The final two sessions focus on working with students with limited or interrupted formal education (migrants, refugees, international adoptees, etc.) who are a growing subgroup of language learners both in the US and Italy. Additionally, students are guided (through multimodal resource materials like hypertext documents with hyperlinks, YouTube videos, etc.) on how to select appropriate literature for multicultural classrooms.

Resources for the eight sessions included the TESOL standards, yet in this pilot project, we also added the European Common Framework and EU Language Portfolio. Instructor-developed PowerPoint lectures serve to frame the sessions.

The first assignment was due after session 3 (i.e. a response paper of 1500

words based on the readings and the activities); during weeks 2-5 they had four virtual quizzes based on the readings; a final project involved the development of a lesson plan for reading or writing skills, for which a multi-step template and accompanying rubric were provided in the syllabus. Ongoing participation was assured through weekly tasks that involved a comment/reflection/response to the course instructor's post on the discussion forum. This stimulated active participation characterized by thoughtful, respectful, and timely contributions that help to extend their thinking and deepen their understanding of essential concepts.

#### *4.1 Qualitative Feedback on pilot project*

Both the official course participants and the guest teachers from the University of Calabria were asked to comment on the course, giving positive and negative feedback, what they liked/enjoyed about the course and what they didn't like/didn't enjoy and possibly provide suggestions for improving the course.

The anonymous final course evaluations revealed that participation was higher than in previous courses, suggesting these students felt strongly about voicing their opinion on the internationalized course. Overall, the students based in Cambridge expressed their appreciation for the comments and feedback on numerous TESOL topics by the Italian overseas Professor.

Strengths of the course were identified as: constructive feedback, relevant assignments, high quality instruction, and an enriched understanding of the eight weekly topics. The variety of resources used, including the European Framework and TESOL Proficiency Indicators, were helpful and informative. One student shared the following comment,

The international aspect of this course was exciting and educational. The professors were friendly, approachable, extremely knowledgeable, and shared important informative resources. Blackboard (online platform) was updated often, which is extremely helpful when working in an online setting.

Areas of improvement highlighted include the need for increased peer interaction and the inclusion of an assignment in the form of a group project.

Similarly, a qualitative enquiry from the Italian perspective generated the following observations / suggestions from this experience:

1. the possibility to enroll in a single module and receive a certificate for the 3-credit course;
2. the contents of the module should not be limited to the American reality but have a universal bearing;
3. more student-student interaction is needed through topical threads where

students can respond to each other's posts.

Today, teacher development courses serve an essential role in upgrading one's CV; for this reason, some students / teacher trainees are interested in following only a single module and at the end receive a certificate for a 3-credit course. This means they would be required to pay for only the single module. The Italian guests also noted that the module components and the course discussions were at times limited to the local reality of the States and that on the contrary they should have a more general perspective in order to be applicable to international settings worldwide. In addition, there should be more interactivity going on among the enrolled students; for example, creating thematic threads in which each student has to respond to each other's posts would reduce Teacher-Student interaction and increase Student-Student communicative exchanges, which would help build a growing community of learners.

This small-scale experience also highlighted other challenges, such as: a) working in different time zones globally can hinder synchronous events; b) international partners need more time to order and purchase course texts; c) a glossary of commonly used terms in the specific TESOL field needs to be developed and would be an asset, especially for terms which vary slightly, such as Sheltered Content Instruction in the US vs CLIL in Europe.

Taking into account the above recommendations would be very beneficial in order to recruit international students mainly because nowadays, online Tesol programs have to be competitive on a global scale.

## Conclusion

Overall, we can say that these teacher trainees appreciated the convenience and flexibility that this online course offered. Web-based learning can be a flexible and cost-effective alternative to classroom learning, but it can also be a waste of time and money if not implemented correctly. From our experience, we can affirm that with online courses students and teacher(s) share their experiences and become partners in the (co)learning process (see Appendix A for sample posting). Perhaps, one of the biggest advantage in online learning programs is the interactivity they offer. Although student participation, both productive and informative, was very high, S-S interaction remained low, constituting in this case a drawback. According to the feedback, the reason was due to lack of time on the part of the participants; in fact, they had no time to create a thread with another peer because a) some were working students and b) the course workload was very demanding. In order to create a more intense discussion among participants, the teacher could solve this by having the participants reply to at least one peer posting per week. Another suggestion could be to lengthen

the course from 8 weeks to 10 weeks; during in-class f2f situations, on the spot comments are spontaneous and do not require extra time. On the other hand, in ACMC contexts reading classmates posts, reflecting and then replying requires more time. An extra two weeks therefore would allow course participants more space to breathe. In this way, students can interact not only with the instructor but also with their classmates at anytime from anywhere to seek clarification for issues they encounter in their homework assignment, to discuss topics raised in the course contents, or to initiate new discussions on related topics. A successful online discussion can have the same synergistic effect as group or in-class discussion, in which students build on one another's views to gain a deeper understanding of the materials from different perspectives.

Designing and conducting online courses effectively can be a challenge. Course design should aim to facilitate dialogue and decrease psychological distance thereby increasing a sense of community among the participants. From this experience, we realized that it takes twice as much time to teach an on-line course as compared to a face-to-face course for both Instructors and students. We also realized that Humanizing language learning is the key; in fact, the course leader created a friendly and anxiety-free online environment, which enabled course participants to feel confident and stress-free. In addition, both learning process and product must have personal value to the student. Therefore, in designing online courses we should ask ourselves: Is the material/content/task personally relevant and significant for my students? Are they truly interested in the topic/issue/task? Simply having the course material online is not the essence of online courses, but the energy that flows into it throughout the course. This energy derives from teacher's enthusiasm to care, motivate, and make sure students understand the material for themselves.

In today's constantly changing globalized society, Professional Development has a fundamental role in education as it keeps teachers up-to-date on new research in education, on how children learn, on emerging technology tools for the classroom, on new curriculum resources, and much more. As mentioned earlier, teacher-training courses delivered via some form of technology gives the teachers-to-be the opportunity to practice, experiment with the technology as students. This enables them to evaluate the pros and cons of technology, what works and what doesn't work, so they may implement ICT in their own classrooms in the future.

It is worth noting that the best professional development is ongoing, experiential, collaborative, and internationally connected. It is hoped that the two universities working in tandem can provide excellent online teacher training programs in ESL/EFL field in the future.



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S. Filice sections 1, 2, 4.1, Conclusions; D. Bardetti sections 3, 3.1, 4.

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## Appendix A: Discussion Board Sample

The screenshot shows a web browser window with several tabs open. The active tab is a discussion board post. The URL is partially visible as 'du/webapps/discussionboard/do/message?restrict\_start\_datetime=2016-9-25%200%3A0%3A00&conf\_id=\_68921\_1&pickname=&pick...'. The page displays three posts, each with a header section and a body of text.

**Post 1:**  
 Thread: Sami and the Time of the Troubles  
 Post: RE: Sami and the Time of the Troubles  
 Author: Serafina Filice  
 Posted Date: April 23, 2015 4:30 PM  
 Status: Published  
 Text: I definitely agree with you Jennifer!

**Post 2:**  
 Thread: expanding on culturally responsive literature  
 Post: expanding on culturally responsive literature  
 Author: Serafina Filice  
 Posted Date: April 18, 2015 5:43 PM  
 Status: Published  
 Text: I read all your posts and I find all the literature books and resources cited extremely useful and very interesting. One thing I'd like to emphasize is that a lot of the culture oriented literature, besides of course enhancing cultural diversity, appreciation and understanding, and tolerance of "the other", can be used for interdisciplinary teaching. for example, Kimberly's folktale is based on traditional Mexican folklore, specifically Aztec mythology, so in class you can build a History lesson using background knowledge about the Aztecs. Or in other cases Geography lessons can be intertwined with the language lesson. It all depends on the book ...expanding to other subject matter, global issues , etc. can make the literature lesson a lot more meaningful for the students.  
 great work everybody!

**Post 3:**  
 Thread: Week 3 Readings  
 Post: RE: website  
 Author: Serafina Filice  
 Posted Date: April 10, 2015 5:49 PM  
 Status: Published



# MODEL FOR MEASURING THE IMPLEMENTATION OF ONLINE PROGRAMS IN HIGHER EDUCATION

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**Keywords:** Measurement model, e-learning implementing, expert judgment, virtual.

This study presents the results of expert judgment assessment of a model to measure the implementation of online programs in higher education. Online education is an innovative approach that has been used worldwide by several universities. The evaluation of the implementation of online education is, generally, focused in technology, content quality, instructor and service quality and learner satisfaction. However, it is weak in the structural and functional aspects of the universities. Therefore, a question needs to be answered: Are the dimensions and components of this model suitable for measuring the implementation of online programs? In order to answer that question, this work follows a descriptive statistical approach and four stages: 1. preparing the questionnaire for model assessment; 2. selecting experts; 3. application of the questionnaire; and 4. analysis of results. This study collected 39 completed responses from experts. The Aiken's V coefficient was used as a measure to quantify the expert agreement.

Findings illustrate the importance (88.4%), sufficiency (82%), influence (81.8%) and priority of the model components. As a conclusion, it was found that the dimensions and components of the model are suitable for measuring the implementation of online programs. The expert criterion is an important technique to support models designed from the literature. Limitations, as well as possible research directions, are also discussed.

## 1 Introduction

Information and communication technologies (ICT) have created new opportunities for education. According to Siritongthaworn *et al.* (2006) e-learning is an innovative approach to education access through the Internet for improving the learner knowledge and skills. ICT support online education and allow universal access to education, equality in instruction, quality of teaching and learning, and professional development of students and professors. It also enables a more efficient management of the education system (Bhuasiri *et al.*, 2012; Selem, 2007).

The implementation of online education is understood as a process of putting into practice either a decision or a plan that goes beyond the educational processes and do not just focus in the computational tools (Sharma, 2011). The Ministry of National Education of Colombia defines the implementation of online programs as all the actions that allow an academic program to be executed (MinEducación, 2007).

Assessment of online education may have different points of views according to the literature review. Some studies were student-centred, i.e. they assess learning goals, service quality, learners satisfaction, interactions, and technology use (Abbad, 2011; Bartimote-Aufflick *et al.*, 2015; Fetaji & Fetaji, 2009; Goh *et al.*, 2017; Ozkan & Koseler, 2009; Selim, 2007; Stefaniak, 2015). Other studies were focused on content, instructor quality, challenges, barriers when introducing an educational innovation, the best practices and critical success factors (Al-Azawei *et al.*, 2016; Berechet & Istrimschi, 2014; Bhuasiri *et al.*, 2012; Clegg & Bradley, 2006; Davidovitch & Belichenko, 2016; de Freitas & Oliver, 2005; McPherson & Nunes, 2006; Ozkan & Koseler, 2009; Shoham & Perry, 2009; Stansfield *et al.*, 2009). However, few studies have assessed elements such as structural configuration, regulations, organizational change and alignment of the mission and vision of an educational organization. These are key elements in higher education institutions (HEIs) for planning and teaching online education.

Moreover, there are very limited studies available to assess the e-learning implementation in a complete academic program, because most studies focus on assessing the implementation of an single online course (Goh *et al.*, 2017).

This lack of studies on assessment of e-learning implementation in a com-

plete program with organisational elements generate an opportunity to solve it. Thus, this work propose a model for measuring the implementation of online programs (MMIOP) in higher education. The MMIOP is supported by the idea that organizational change is necessary to allow and encourage innovation in education (Cabrero & Arellano, 1993). Leadership, incorporation and integration of ICT in education are also taken into account in the model, as was pointed out by trends of the Institute of Prospective Technological Studies (IPTS) and the European Commission (Ala-mutka *et al.*, 2010).

This study aims is to examine the suitability of the MMIOP taking into account the experts opinion. In this context, the research question proposed was: Are the dimensions and components of the MMIOP suitable for measuring the implementation of online programs?

The consultation conducted by experts in e-learning and organizational management topics has the purpose of answering the following guiding questions:

1. What is the importance level of the components embracing each dimension?
2. What is the influence level of the components of each dimension to the success of measuring the online programs implementation?
3. As an expert, are the components of each dimension sufficient to measure it?
4. Which is the priority order of the components of each dimension to measure them?

The next sections of this article describe the proposed model, employed methodology, results of the descriptive analysis by each guiding questions, and concluding remarks.

## 2 Conceptual Model

The MMIOP was done based on the analysis of articles from scientific literature and legal documentation about e-learning and organizational management in education. The first version of MMIOP was assessed in 2016 by a group of professors from a Spanish university, who are experts in distance education and e-learning issues. This university has experience teaching distance courses since 1971 and e-learning courses since 1993. The results of this assessment contributed to the refinement of the first version of MMIOP, to perform adjustments in the descriptions writing and to reduce the model components in the second version.

The MMIOP in its second version, included three dimensions and 15 components. This second version of MMIOP allows establishing a reference framework in order to determine the progress level of the HEIs in the implementation of

its online programs. A description of each dimension is presented in Table 1.

Table 1  
DEFINITION OF THE MMIOP

Dim.	Description	Component	Authors
Structural	It is related to organizational configurations that influence the actual decision-making process for offering online programs.	Organizational support	(Abbad, 2011; Al-Azawei <i>et al.</i> , 2016; AQU, 2015; Berechet & Istrimschi, 2014; Bhuasiri <i>et al.</i> , 2012; Cabrero & Arellano, 1993; Davidovitch & Belichenko, 2016; Hassanzadeh <i>et al.</i> , 2012; Hubackova, 2015; McPherson & Nunes, 2006; O'Neill, Singh, & O'Donoghue, 2004; Selim, 2007; Sharma, 2011; Siritongthaworn <i>et al.</i> , 2006; Stansfield <i>et al.</i> , 2009)
		Training	
		Human capital	
		Organizational communication	
		Resources	
		Organizational structure	
Organizational formalization			
Functional	It is about the utilitarian factors of the educational organization to support online education such as mission, vision, values, strategic objectives, teaching planning, organizational culture, organizational cooperation, evaluation and quality assurance.	Quality assurance and evaluation	(AQU, 2014; Clegg & Bradley, 2006; de Freitas & Oliver, 2005; Doherty, 2010; El-Ghalayini & El-Khalili, 2012; Fetaji & Fetaji, 2009; Grigoraş, Dănculescu, & Sitnikov, 2014; Hubackova, 2015; Jung, 2011; Lomis & Rodriguez, 2009; Ozkan & Koseler, 2009; Shoham & Perry, 2009; Stansfield <i>et al.</i> , 2009; Stefaniak, 2015)
		Organizational culture	
		Organizational strategy	
		Teaching planning	
Operational	It is about the operation, planning and development of the online program, optimizing the economic, administrative, and technological resources.	Program overview	(AQU, 2012, 2014, 2015; Bartimote-Aufflick <i>et al.</i> , 2015; Becker, Knackstedt, & Pöppelbuß, 2009; ENQA, 2015; Fetaji & Fetaji, 2009; Goh <i>et al.</i> , 2017; Presidencia de la República de Colombia & Ministerio de Educación Nacional, 2015)
		Research	
		Educational resources	
		Curriculum	

### 3 Methodology

In this study was applied both quantitative approach, and descriptive statistics strategy, in order to present the results of the assessment of the MMIOP by a group of experts.

#### 3.1 Preparing the questionnaire for model assessment

In this stage, the questionnaire was designed following the four guiding questions above for the components of each dimension. The assessment criteria used in the questionnaire were: priority, importance, influence, and sufficiency (Escobar & Cuervo, 2008). Two PhDs and one master reviewed the questionnaire. This review allowed to rewrite two questions, change the answer options



of a question and add four more questions. Subsequently, the questionnaire was configured on-line, with 36 questions on the LimeSurvey web server.

### ***3.2 Selecting experts***

This stage began with a selection of experts in e-learning and organizational management topics. The identified population was found in the Network of Scientific Journals of Latin America and the Caribbean, Spain and Portugal (REDALYC). This is a bibliographic database and a digital library of open access journals that collects the publications of different experts from Latin-American and the Caribbean. The experts were selected based on their knowledge and experience in the above topics (Bhuasiri *et al.*, 2012; Escobar & Cuervo, 2008). The selected experts had publications in the last five years, with postgraduate education (PhD and master) and affiliated with universities. As result, 103 experts were identified in the field of organizational management and e-learning in Latin-American from twelve several countries: Spain (29), Colombia (27), Mexico (27), Venezuela (7), Costa Rica (3), Ecuador (3), Cuba (2), Argentina (1), Brazil (1), Chile (1), Nicaragua (1) and Uruguay (1).

### ***3.3 Application of the questionnaire***

The questionnaire was sent to the 103 selected experts. The expert requests were conducted by email through an online questionnaire. Five of the requests did not reach the recipients because the destination email servers reject them. Three of the experts wrote that they could not participate in the study, 51 experts started the questionnaire, and only 39 completed it. The data collection process was between December 2016 and January 2017. The distribution of participants in regional terms was: Colombia and Spain comprised 35.9% of participation respectively. Mexico corresponded to 20.5%. Chile, Cuba and Ecuador included 2.6% each one. The formation level of the experts was 61.5% for PhD and 38.5% for Master. 48.7% of the experts manifested more than 20 years of professional experience. Knowledge of the 67% of the experts was related to organizational management topic in “high” and “very high” categories. Around 97.4% corresponds to the knowledge of experts in online education topic in “high” and “very high” categories.

### ***3.4 Analysis of results***

This stage was performed through the analysis of the 39 complete responses of the questionnaire provided by the experts. The descriptive statistical analysis was carried out using measures of central tendency, dispersion measures, charts, Cronbach’s alpha coefficient and Aiken’s V coefficient (Escobar & Cuervo,

2008; Escurra, 1988). The software used to process the results was SPSS v20. The importance level and influence level of the dimensions were computed using the percentage values sum of “high” and “very high” categories in the components of each dimension. The Aiken’s V coefficient was used to quantify the agreement or concordance among the experts with the dimensions and components of the MMIOP. Construct validity refers to the degree to which the instrument measures a particular construct done in theoretical manner. It was analysed for the structural, functional, and operational dimensions.

In order to estimate the confidence of an expert, as proposed by Escobar & Cuervo (2008), it is necessary to quantify the agreement among them, especially when the agreement includes subjective elements from each expert. The measure of agreement (V) estimates the consensus among the experts by scoring and it is defined by Eq.1. Thus, the computed value is expected to be close to 1.

$$V = \frac{S}{N(C-1)} \quad \text{Eq. 1}$$

where:

S = Sum of value assigned by each expert

N = Number of experts (39 in this case)

C = Number of categories (5 in this case)

The Aiken’s V coefficient was selected because it combines the ease of calculation of multiple experts, guarantees the objectivity of the procedure and contributes to verify the content (Escurra, 1988). The confidence intervals with 95% were calculated using the score method and the equations used by Merino & Livia (2009). These equations establish the statistical significance to understand the results and minimally acceptable values.

## 4 Results and discussion

### 4.1 Importance level assessment

Responses from experts on the importance of components in each dimension are shown in the Fig. 1. This figure shows the most important components as: curriculum of the operational dimension, teaching planning of the functional dimension and human capital of the structural dimension.

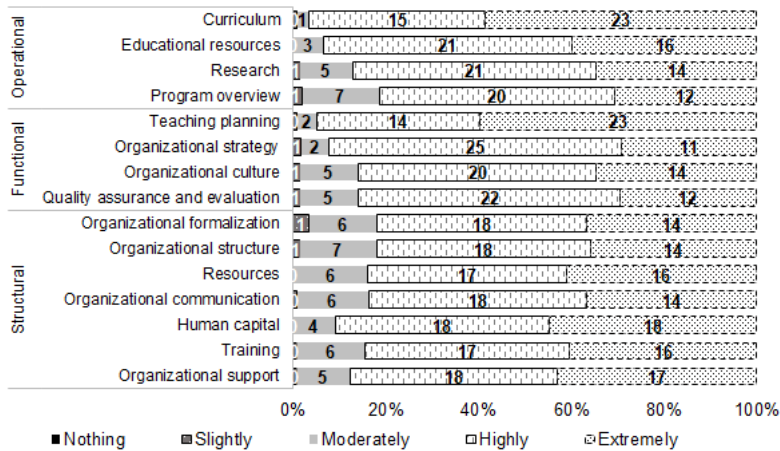


Fig. 1 - Importance of the components and dimensions of the MMIOP.

Positive answers about the importance of the components that integrate the three dimensions indicate the agreement among the experts who evaluated the model. Specifically, the fact that 90.5% of the experts considered “extremely” and “highly” important the assessment of the functional dimension suggests that it is relevant and contains utilitarian factors of the organizational management required by HEIs.

Regarding to the operational dimension, 89% of experts reveal that this dimension is “extremely” and “highly” important. This suggests a high agreement among the experts and the need to assess some planning elements of online programs.

In the case of the structural dimension, more than 85.6% of experts considered “extremely” and “highly” important the assessment of the dimension. In addition, it suggests that the structural dimension is also relevant and contains structural specifications required to measure the implementation of online programs.

The table 2 presents the calculated values: mean ( $\mu$ ), median ( $\tilde{x}$ ), standard deviation ( $\sigma$ ), Aiken’s V Coefficient (V), confidence interval (sig), and Pearson Correlation Coefficient (p). The values of the median reveals that the concentration of importance level of components were between “highly” and “extremely” important. It means that all components of the three proposed dimensions were important for measuring the implementation of online programs in HEIs.

Table 2  
IMPORTANCE OF COMPONENTS ACCORDING TO EXPERTS

Dim.	Component	$\mu$	$X$	$\sigma$	V	Sig.	1.	2.	3.	4.
1.	MMIOP	4.26	4	.64	.81	.75-.85	1	.76**	.75**	.92**
2.	Structural	Organizational support	4.30	4	.65	.82	.76-.87	1	.49**	.64**
	Training	4.25	4	.63	.81	.75-.85				
	Human capital	4.36	5	.61	.83	.78-.88				
	Organizational communication	4.20	4	.65	.79	.73-.84				
	Resources	4.25	4	.65	.81	.75-.86				
	Organizational structure	4.17	4	.74	.79	.73-.84				
	Organizational formalization	4.15	4	.75	.78	.72-.84				
3.	Functional	Quality assurance and evaluation	4.14	4	.59	.78	.72-.83	1	.65**	
	Organizational culture	4.19	4	.70	.79	.74-.85				
	Organizational strategy	4.20	4	.57	.79	.73-.85				
	Teaching planning	4.54	5	.61	.88	.83-.92				
4.	Operational	Program overview	4.10	4	.70	.77	.71-.83			1
	Research	4.21	4	.69	.80	.74-.85				
	Educational resources	4.33	4	.59	.83	.77-.88				
	Curriculum	4.56	5	.54	.89	.84-.93				

Aiken’s V analysis shows that all components have high degree of agreement among experts ( $V > 0.7$ ) and only eight components have a strong agreement ( $V > 0.8$ ) (Escurra, 1988). Besides, the values of each Aiken’s V coefficient are within the confidence intervals (sig), therefore, all components of the model were accepted (Merino & Livia, 2009).

The Pearson Correlation Coefficient was computed to examine strength among dimensions and to know the construct validity of dimensions and MMIOP. Correlation analysis shows that all dimensions were both significant and positively correlated ( $p < 0.01$ ). In particular, the operational dimension was the most highly correlated with the model, because it comprised a correlation of 0.92, followed by the structural dimension that achieved 0.76, and the functional dimension with 0.75. Those values confirm that the conceptual construction of the MMIOP was relevant and consistent.

The MMIOP obtained a Cronbach’s Alpha Coefficient ( $\alpha$ ) of 0.88, the structural dimension achieved 0.82, the functional dimension obtained 0.71, and the operational dimension reached 0.8. These  $\alpha$  values corroborate the internal consistency, reliability, and construct validity for both each dimension and the whole model (Hassanzadeh *et al.*, 2012; Ozkan & Koseler, 2009).

## 4.2 Influence level assessment

Five categories were proposed to assess the influence level of the components of the MMIOP (very low-very high). The results allowed to establish which components were the most influential in measuring the implementation of online programs, according to expert judgments (see Fig. 2). The most significant components of each dimension were: quality assurance and evaluation of the functional dimension with 94.9% of influence; human capital of the structural dimension with 92.3% of influence; and curriculum of the operational dimension obtained 89.7% of influence. The components with the lowest agreement of experts in the influence level were: program overview with 61.5% of influence and organizational formalization with an influence of 69.2%.

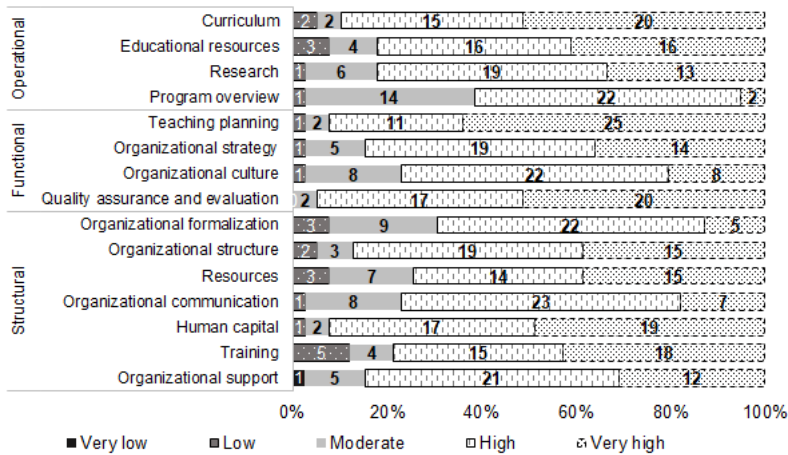


Fig. 2 - Influence of components and dimensions on the success of MMIOP measurement.

The structural dimension obtained an influence of 80.4% and Aiken's V of 0.77; the functional dimension achieved 87.2% of influence and an agreement of 0.82 in Aiken's V. The operational dimension obtained 78.8% of influence and Aiken's V of 0.76. Finally, taking into account the "very high" and "high" values of the categories to assess the influence, the experts responses reveals an influence of 81.8% of all components that ensures the success of the model measurement. Those values represent an estimator to establish that the proposed model was suitable and its components and dimensions influence the measurement of MMIOP.

### 4.3 Sufficiency assessment

The sufficiency of the components was assessed through five categories (very insufficient, insufficient, moderate, sufficient and very sufficient). The components for measuring the dimensions were “very sufficient” and “sufficient” according to 82% of the experts. None dimension was assessed as insufficient. The operational dimension achieved 87.2% of sufficiency, followed by the functional dimension with 84.6%, and the structural dimension obtained 74.4% of sufficiency.

### 4.4 Priority order assessment

The MMIOP was initially configured in alphabetical order, but it was necessary to know how each component in each dimension should be ordered. For this reason, experts were asked to prioritize each component in each dimension.

The score was computed to establish the ranking of the components in each dimension. The results of this calculation are shown in Fig. 3 for the three dimension of MMIOP. This figure also shows the ordered dimensions and components according to the priority set by the experts.

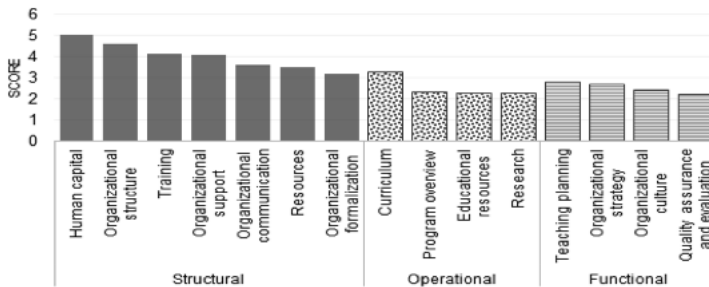


Fig. 3 - Priority of the measurement of the components of each dimension of the MMIOP.

The results contribute to fit the model according to the order established by the experts. The ranking of components of the structural dimension was: 1. Human capital, 2. Organizational structure, 3. Training, 4. Organizational support, 5. Organizational communication, 6. Resources, and 7. Organizational formalization. The ranking of components of the operational dimension was: 1. Curriculum, 2. Program overview, 3. Educational resources, and 4. Research. Finally, the ranking of the functional dimension was: 1. Teaching planning, 2. Organizational strategy, 3. Organizational Culture, and 4. Quality assurance

and evaluation.

The answers obtained for the four guiding questions provided a framework for deciding about the components changes and model fit. A synthesis of the results was the high importance, the high influence and the sufficiency of the components of each dimension for measuring the execution of the online programs. Finally, the priority of the measurement is an interesting aspect to assess because it offers a manner to order the MMIOP and configures the evaluation's instrument to apply in the HEIs.

## Conclusions

The assessment by expert judgment is a useful technique when is required provide stability to a conceptual model of measurement. The assessment outcomes of the MMIOP confirm that this is suitable, its content is valid, and it is accepted by the consulted experts. In consequence, the research question of this paper was answered.

The experts characterization allowed identify that the selected professionals have a long career and a high-level knowledge in the field of e-learning and organizational management. The inclusion criteria ensure that the experts were qualified to comment and verify the MMIOP. The consensus among the experts was confirmed in the importance, influence, sufficiency, and priority of the components of each dimension.

The construct validity of the model dimensions was corroborated with the analysis of the judgments issued by international experts and the statistically significant correlations obtained it. Thus, the results confirm that the model elaborated from literature review was suitable, covers several aspects, and contribute to establish a mechanism for measuring the implementation of online education in the HEI.

Despite the relevant findings in the implementation of online programs in the HEIs this study has some limitations. The research focused exclusively with experts from Spanish-speaking countries, leaving out the experiences of experts from English-speaking countries with significant advances in e-learning. The experts have different needs, motivations, and constraints for using and evaluating the e-learning systems that could affect the qualifications of the MMIOP. Future research should consider the application of additional questionnaires in the HEIs of the Colombian context, in order to obtain a better representation of the reality and it also assurance the success of the model.

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# FROM EDUCATIONAL CONTEXTS TO ADDICTIONS: THE ROLE OF TECHNOLOGY IN TEACHING METHODOLOGIES AND IN PREVENTION AS AN EDUCATIONAL FUNCTION

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**Keywords:** Technology, Learning objects, Innovative Educational Strategies, Technological addiction.

Among the effects of neoliberalism, the diffusion of technologies, in negative the advance of individualism on the sense of community, is to be pointed out. Learning and cognition processes are influenced by the environmental experience, as technology has created a new environmental space to experience among digital natives. On the other hand, nowadays, technological addiction is an educational problem not to be underestimated given its pervasiveness and diffusion among teenagers. The purpose of this article is to examine some positive and negative effects of technology on teenagers' life styles. From a methodological perspective, it will be provided a systematic review of the existing literature on both technological addictions, by examining negative effects on adolescents' mental health, and on educational strategies aimed at promoting positive effects through the analysis of the relationships between technology and learning processes. By comparing empirical studies and international experiences, it can be

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suggested that education plays a key role in preventing behavioral addictions and promoting physical and mental wellbeing, given that the effective and guided use of technology could represent a precursor of positive and stable attitudes towards healthy habits and learning processes.

## 1 Introduction

One of the axioms of neoliberalism professed by Friedman (1962/2009) is the choice of individuals to follow their selfish interests, so that everyone can reap the maximum benefits in a free global market. If this individualism does not assert itself, and consequently growth diminishes the only possible explanation is that the market is not yet enough (utopically) free. Contemporary sociologists (Klein, 2014) see in the three characteristics of neoliberalism: deregulation, privatization and a reduction in social spending, the causes of exasperated individualism, isolationism and the crisis of contemporary society. According to some (Boas & Gans-Morse, 2009), one of the products of this socio-economic context is the technology now pervasive to human existence.

Contemporary 'techno-logia' creates and exchanges meanings and social interaction, and it participates in the building of identity (Di Lorenzo *et al.*, 2013). Technology is an environment in which individuals can experience, likewise writing is an extension of the human mind; it combines experiences of a real and virtual world, and it determines cognitive, emotional and relational re-construction among digital natives. The fascination of technology is expressed through the creation of new cultural objects that leads to redesign the world, to redefine the categories of space and time and new forms of interpersonal relationship (Limone, 2012). The digital technologies used in learning environments, in particular social media and network environments, are redefining both social relationships and the modes of knowledge exchange, offering not only the architecture for user participation, but also true methodologies performing teaching that can pose new challenges to educational systems (Pireddu, 2014).

According to literature, it is possible to identify a dual attitude towards technology: on the one hand, technology is considered an indispensable educational tool for individual; on the other hand, it could led to the development of different forms of addictions, and it overlaps with the other already-known forms of behavioral addictions (Young, 1999). Therefore, the need arises to construct a complex epistemology of *digital culture*, which responds to the modern dynamics emerging from the virtual, sometimes degenerating towards an unprecedented phenomenology of intolerance.

## 2 The Study

A systematic review of the existing literature was adopted to search for articles in the main international databases (Google Scholar, PsycInfo and Sco-

pus) on the issue of technological disadvantages among adolescents and on the relationships between cognitive abilities and prevention strategies, using, in English and in Italian, just the terms “Didactic methodologies”, “Educational prevention”, “Media education” and “Technology addiction” as keywords. Following the Prisma guidelines (Moher *et al.*, 2009) a systematic literature review process has been conducted: the literature search is followed by an evaluation of the titles and abstracts based on the research idea that although the evidence scientific relationships draw a strong relationship between technological dependence and adolescence, it is equally true that prevention and education to health and sport can reverse this trend, that is to make adolescents responsible users and not just passive users (identification). Bibliographic research and evaluation for the inclusion of publications was conducted independently by the two authors. The disagreements have been solved through a critical discussion, coming to full agreement between them. Regarding the inclusion and exclusion criteria, articles were selected in peer reviewed journals, books or book chapters in English or Italian that aimed to describe or evaluate the dimensions and variables expressed in the above-mentioned research idea (screening). All publications that dealt with addiction only in general, and those publications whose complete format (Relevance) could not be found were excluded. The time limit for the year of publication has been set for the last 10 years, so the articles have been selected since 2008. For the inclusion of the contributions, a qualitative summary of the most relevant information was also conducted with comparisons between the various publications without carrying out a quantitative analysis in the meta-analysis format.

Eligibility	951 of records identified through database searching	26 of additional records identified through other sources
	↓	
	937 of records after duplicates remove	
	↓	
Screening	937 of Publications evaluated on basis of title and abstract	658 of Excluded publications on the basis of inclusion and exclusion criteria
	↓	↓
Identification	279 of Publications evaluated in full version	98 of Excluded publications on the basis of inclusion and exclusion criteria
	↓	↓
Included	181 of Publications included in the qualitative synthesis	

Fig. 1 - PRISMA Flow Chart of the selection process

The process of inclusion of studies in the systematic review is described in Figure 1. After the elimination of duplicates, the research identified 951 studies consistent with the research idea. Subsequently on the basis of the title and the abstract 658 were excluded because they were not relevant. Of the 279 with full text 181 they met the inclusion criteria. Literature identifies teenagers, who need to search for new experiences and sensations, perceived as out of the ordinary, and to engage in adventurous and dangerous situations (*Sensation seeking*), as the most vulnerable to the tempting features of technologies, which represent risk factors of the onset of the above-mentioned addictions. In adolescence impulsivity, considered as a personality trait, plays a risk factor in developing a pathological disorder (Shaw et al., 2006). On the other hand, emotional intelligence decreases vulnerability to disparities and, therefore, becoming a protective factor against social anxiety, isolation and consequently of addiction (Oskenbay *et al.*, 2015; Toto, 2017b).

### 3 Findings

In this section, the main contents of the selected literature will be focused on different forms of technology addictions and the possible causes that can predict the onset of these dynamics in young-adults. Indeed, the inclusion of Internet Gaming Disorder (IGD) in Section III of the Fifth Edition of the *Diagnosics and the Statistical Manual of mental disorders* has increased the interest of researchers in the development of new standardized psychometric tools for assessing this disorder. To date, based on Griffiths' model (2005) the nine-point Internet gaming scale (IGDS9-SF) has been validated recently in Italian context (Monacis *et al.*, 2016). Moreover, although research on social networking addiction has increased considerably over the last decade, the number of validated tools that evaluate this behavioral addiction remains few. An important tool shared by the scientific community is the Bergen Social Media Addiction Scale (BSMAS), which has been recently used to provide empirical data on the relationship between social media addiction and attachment styles, thus supporting theoretical associations between them (Monacis *et al.*, 2017a).

Recent studies have shown the predictive role of the attachment style in the "Excessive use of social network sites (Rom & Alfasi, 2014; Yaakobi & Goldenberg, 2014). Specifically, affiliated individuals have large social networks and more social ties (Jenkins-Guarnieri et al. 2012), affiliated people use Facebook more frequently and are constantly worried about how they are perceived on Facebook (Lin 2016), and the individuals characterized by the avoidance attachment style show little interest in Facebook (Oldmeadow *et al.*, 2013). Internal operating models also classified as different types of attachment represent the vision of the world that the child is built, his cognition of affec-

tions and his strategies of action (Bolbwy, 1969; 1982). Addictive behaviors appear to be a dysfunctional attempt to counter the in-controlled emergence of infant traumatic experiences.

Based on the observed general associations between attachment and identity styles reported by Doumen *et al.* (2012), it was also predicted that these factors would be related to online addictions. In this direction, Monacis *et al.* (2017b) has analyzed for the first time the extent to which identity styles and attachment orientations could explain three types of online addiction (i.e., Internet Addiction, internet gaming addiction, and social media addiction). The results have shown that Internet, gaming and social media addictions have been predetermined by a common risk and protective factors: among identity styles “informational” and “diffusion-avoiding” styles are considered risk factors, while normative style is a protective factor. Among attachment dimensions, the “secure” attachment orientation is a protective factor, since it negatively predicts the three online addictions. These results highlight the important role played by identity formation in the development of technological addictions and confirm the different role plays by attachment styles.

## 4 Discussion

The second part of the current overview will analyze the value of technology in educational context and how same educational strategies could promote a positive human-computer interaction.

While digital natives show a competence in the use of digital tools from the first years of life, on the other hand digital tools are the key to access to new generations: social media, according to literature, thanks to their pervasiveness has increased the possibilities of secondary prevention, allowed to study and trace common coping styles, increasing the number of subjects to be reached both in the diagnosis and in the prognosis of technological dependency. In this talk, the studies considered showed that the use of preventive measures is effective in the treatment of addictions, in fact, a healthy approach based on lifestyle is strongly supported, as it aims to influence the personality and the components of personal choice that have an impact on health and social responsibility. The most followed strategy is the promotion of sport and physical education as a precursor of physical and mental well-being that counteracts the maintenance of bad habits (Di Tore, 2017). Difficulties in the realization of these interventions are described by the same educators who show low self-esteem in the contemporary context and parents who lack the instruments of dialogue with these new generations (Strazzeri & Toto, 2017).

A sector heavily influenced by technology is education: education sciences should, in fact, communicate with the subjects in formation by including the

socio-cultural context membership. However, educational potential and the variation of didactic methodology are unlimited, so that content and relationships can be differentiated exponentially. In this regard, a research carried out in China has assessed the extent to which the planned introduction of Information Technology (IT) for five years in music lessons has recorded changes of approaches in musical teaching. There are three generalizable questions emerged from this IT experience : (1) Is IT used to teach more effective than traditional music pedagogy? (2) According to teachers' opinions, could IT help to improve teaching practices? (3) whether the use of IT increases student interest in learning. Although teachers in this study have argued that music technology could facilitate their work, they had different views on the use of ICT and the quality of education in general. Students, on the other hand, appreciated ICT by saying that using IT would improve the quality of their learning (Ho, 2004).

The teaching practice has incorporated the multimedial transformations of the school classes; in addition to the equipment of computer equipment also the design of software and learning objects is affected by the educational needs of students. For example, in music education programs have been introduced that allow to compose music even to students who are approaching for the first time to music (Toto, 2017a). The major resistance, according to international literature, to introduce the technology in the classroom still concern the teachers. These resistances arise both from the lack of knowledge of digital programs in various disciplines and from the lack of teacher training on new digital tools. The latest generation of digital technology also allows students to integrate and express their ideas with ease, allowing them to participate in classes even if they are culturally disadvantaged and to be themselves co-authors of the training process. However, technology has not always been preferred by students; in a study conducted in parallel between digital and traditional lessons, when students are asked to express their preference between teacher and computer feedback, they have replied that they prefer human-to-computer feedback (Karlsson *et al.*, 2009), emphasizing technology has an effect on enthusiasm and on performance and information retrieval, but that the relational and emotional aspect of education is not yet reached by technological tools.

## Conclusion

The use of the media has already had significant consequences on teaching methods and on the practice of building and transmitting knowledge, but this must not ignore the necessary knowledge of the students' cultural background, which translates into terms of communication, relationship and construction of the identities and dynamics of social behaviors mediated by digital technologies (Collins, & Halverson, 2014). Only in this way can we bridge and strengthen



the often emerging disconnection between the world of education and the real contexts of life. By making learning environments, teaching students, technologies and methodologies able to co-act within the macro learning process (Bevilacqua, 2011). Many of these studies suggest that internet abuse would be related to loneliness, vacuum, feelings of depression, difficulty in perceiving reality (Santovecchi & Furnò, 2014). the daily use of the Internet is linked to people's social contexts, that is, the result of the lack of social support from their family members can facilitate the onset of technological addictions, since social contacts and reinforcement gained on the Internet can lead to an increase in the desire to maintain a 'virtual' social life. As a result, when adolescents develop social media addiction, they have little time and energy to keep active social contacts in their daily lives. This phenomenon increases the risk of the onset of feelings of loneliness, depressive moods and low self-esteem (Lin *et al.*, 2017). However, there are researches in favor of technology that states that it favors a brain stimulation of the players, causing them to act differently than normal conditions due to the upcoming of the visual messages provided by the images. Particularly, video games, as sensory motor, play and enhance some manual and precision skills, can lead to greater concentration, facilitate self-control, and manage emotions related to carrying out a task. They can develop different aspects of personality, such as take initiatives and decisions in a short time and address the difficulties (Scala *et al.*, 2017). Education in digital technologies and media education in general insist on promoting the critical sense, on creating a consumer of active and creative media. in this context Psycho-physical well-being becomes a goal of rethinking education and its future modifications (Donato *et al.*, 2017). The positive correlation between learning and positive emotional involvement has been demonstrated, demonstrating once again that by investing in the role of cognitive, affective and relational components in online teaching, it is possible to facilitate learning and to enrich the educational relationship that can also be established on a virtual level. As emerges in the literature is the positive emotional involvement the aspect that most needs to be increased in educational technologies, in fact, learning improves when one is involved emotionally also in the e-learning environment (Biasi, 2017).

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