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Non-Native Teachers Investigating New Englishes: Is Data-Driven Teaching a part of 21st Century Digital Literacy?

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ABSTRACT

While teacher-as-methodology-researcher paradigm in the area of methodology is quite firmly established, teacher-as-language-researcher is less common, especially in teacher training programmes. Much less emphasis is placed on equipping teachers (especially non-natives) with skills of language analysis, hypothesis posing, data retrieval and analysis. The use of ready-made language corpora in preparing classroom data and creating materials is still inadequately covered in teacher training programmes, let alone putting future teachers in the shoes of linguistic researchers observing the changing face of English.

The purpose of this paper is to present a case for promoting teacher-as-language-researcher attitudes in the graduate teacher training programme. A case study is presented, in which student teachers were gradually introduced into New Englishes, through existing corpora, text retrieval and compilation, and – finally – do-it-yourself concordancing. The data from questionnaires and teacher diaries will illuminate upon the viability of self-made corpus compilations as a part of 21st century digital literacy.

Keywords: Data-Driven Learning, digital literacy, language teacher education, EFL, new Englishes, world Englishes.

Enseñanza basada en datos: ¿Una de las destrezas digitales del siglo XXI?

RESUMEN

A pesar de que, en el área de la metodología, el paradigma del "docente-investigador de la metodología" se considera firmemente establecido, el del "docente-investigador lingüístico" es menos común, especialmente en los programas de formación de profesorado: se le da mucha menos prioridad a dotar a los profesores con habilidades de análisis de la lengua, formulación de hipótesis y extracción y análisis de datos. Esto es, aún no se está incorporando adecuadamente en los programas de formación de profesorado el uso de los existentes corpus lingüísticos para la preparación de datos para el aula y la creación de materiales, y menos aún se pone a los futuros profesores en la piel del "docente-investigador lingüístico" que observa la evolución de la lengua inglesa.

El objetivo de este artículo es presentar una propuesta para fomentar la actitud del "docente-investigador lingüístico" en el programa de formación docente de posgrado. Se plantea un estudio de caso consistente en presentar gradualmente las nuevas variantes del inglés a los futuros profesores, a través del análisis de corpus existentes, recuperación y compilación de textos y, por último, la habilidad de estimar su concordancia. Los datos extraidos de los cuestionarios y los diarios de los profesores arrojan luz sobre la viabilidad de las compilaciones de corpus, cuya elaboración se considera una de las destrezas digitales del siglo XXI.

Palabras clave: Enseñanza basada en datos, alfabetización digital, formación de profesorado de idiomas, inglés como lengua extranjera, nuevos ingleses, ingleses mundiales.

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1. Introduction

Teachers' autonomy and independence, together with language awareness, are regarded as pre-requisites for successful language teaching. Quite a few studies have been conducted in the field of teacher research, focusing mainly on how language instructors experiment with their methodology, how they adapt methods, activities, or techniques to the needs of learners. The proponents of action research view language teachers as experimentators and reflective practitioners, encouraging them to conduct small-scale studies to improve their pedagogical practices.

However, while the teacher-as-methodology-researcher paradigm in the area of methodology is quite firmly established, teacher-as-language-researcher is less common, especially in teacher training programmes. Much less emphasis is placed on equipping teachers (especially non-natives) with skills of language analysis, hypothesis posing, data retrieval, and analysis. The use of ready-made language corpora in preparing classroom data and creating materials is still inadequately covered in teacher training programmes, let alone putting future teachers in the shoes of linguistic researchers observing the changing face of English.

The purpose of the paper is to present a case for promoting teacher-as-language-researcher attitudes in the graduate teacher training programme. A case study will be presented, in which student teachers were gradually introduced into New Englishes, through existing corpora, text retrieval, and compilation, finally, to do-it-yourself concordancing. The data from questionnaires and teacher diaries will illuminate upon the viability of self-made corpus compilations as a part of 21st-century digital literacy.

2. Background to the study

2.1. Language teachers as language researchers

The contemporary EFL classroom assumes the language teacher performs a multitude of roles (Harmer, 2001; Krajka, 2012; Zawadzka, 2004). At different moments of instruction, they are to adopt different stances, strengthening and loosening control over learners and allowing them greater or lesser autonomy as needed. Some of the most crucial roles are manager, organizer, evaluator, facilitator, controller, prompter, assessor, stimulator, source of language input, tutor, resource/teaching aid, performer, language model, observer, expert, and researcher. These roles are adopted and changed depending on pedagogical purposes, learners' needs, lesson topics but also the cultural context in which the teaching/learning process is taking place. Out of this plethora of roles, for the interest of the current study, two specific roles deserve focusing on, namely reflective practitioner and expert/researcher.

The role of a reflective practitioner (Williams & Burden, 1997) assumes pondering over the most suitable instructional style, critical observation of classroom incidents, and proposing remedial action (Wysocka, 2003). This is similar to the role of a teacher as researcher, which, according to Grucza (1993), does not necessarily involve executing empirical research in the classroom according to all rigours of particular methods, but, more importantly, exhibiting the skills of independent thinking, critical evaluation of theoretical frameworks, seeking own solutions to practical problems and preparing learners for independent intellectual activity. This role overlaps with the functions of a critical investigator of published didactic materials, conscious adaptator, and materials writer (Dylak, 2006). In those teaching contexts that are strongly method-oriented (for example, Berlitz schools or Callan schools), roles will be prescribed or imposed on teachers, with little or no possibility of rejection.

Teachers can think of themselves as explorers, researchers, and ethnographers. Their workshop is the students themselves, their families and neighborhoods, and the ever wider circles embracing larger and larger communities (Ayers, 2010). The classroom is a natural research site, as teachers regularly implement pedagogical innovation through observations, field notes, collected samples, and informal interviews with students in order to inform their decisions about curriculum implementation. As Cochran-Smith and Lytle (1993) state, research can and should be an important part of teacher empowerment and educational reform. Such inquiry can be viewed as knowledge-based, outcome-centered, and resulting in learning opportunities for students. Teacher research also allows educators to build local and public knowledge through ongoing learning (Cochran-Smith, 2001), emerging from their own curiosity and reflective inquiry on their individual practices (Farrell, 2018; Mann & Walsh, 2017). Teacher research has been defined as "systematic self-study by teachers (individually or collaboratively) which seeks to achieve the real-world impact of some kind and is made public" (Borg & Sanchez, 2015, p. 1). It may include different approaches such as action research (Banegas & Villacañas de Castro, 2019; Borg, 2013; Burns, 2010; Freeman, 1998), exploratory practice (Hanks, 2017a, 2017b), exploratory action research (Smith, 2015; Smith & Rebolledo, 2018), self-study, lesson study, design-based research and scholarship of teaching and learning (Admiraal et al., 2014).

Even though in the teacher's work there is the intersection of teaching and research, the classroom is not a laboratory but a complex and dynamic system with many moving parts, which interact often in an unpredictable way (Megowan-Romanowicz, 2010). In order to optimize the impact of their teaching practice, teachers must turn away their perception from their own work (teaching) to their students' work (learning - Fuller & Brown, 1975). The teacher watches and listens carefully, reflects upon students' utterances, actions, and reasoning, trying to make sense of student-teacher interaction and adjust his or her teaching practices accordingly (Feldman, 1996). According to Gray and Campbell-Evans (2002), when teachers do classroom research, they begin to view themselves as learners, their classrooms as places where they are learning, and the data collected as data to be understood (Keyes, 1999). Teachers who engage in research are considered to have an increased understanding of the complexities of the school community and learning environment (Caro-Bruce & Zeichner, 1998).

For teachers to become researchers is a challenging process – they need to become critical consumers of research, learning to understand and blend quantitative and qualitative approaches (Fallon & Massey, 2008). Moreover, they need to develop the ability to understand and interpret existing research, set up and conduct their own research methods, as well as apply their research knowledge to the daily practices and routines of the classroom (Massey et al., 2009). This is often done against a professional culture that might not value teacher research (Kitchen & Jeurissen, 2006) and might devote a much higher value to immediate, unreflective, and routine action (Calderhead & Gates, 1993). The feeling of helplessness and lack of power to change the system, according to Nair (2007), may contribute to teachers' reluctance to be involved in research.

Teachers' belief systems are built up gradually over time and consist of both subjective and objective dimensions. Teachers' beliefs influence their consciousness, teaching attitude, teaching methods, and teaching policies, and finally, learners' development. As Richards and Lockhart (1994, p. 29) state, "what teachers

do is a reflection of what they know and believe". Teachers' belief system plays a decisive role in teaching/learning of English, in their willingness to become reflective practitioners (Schön, 1983) and small-scale educational researchers. What seems crucial given these studies, then, is reflecting upon the ways of building teachers' research attitudes, increasing their meta-research awareness, building a culture of individual investigation and change implementation. These processes are particularly important in those contexts in which teachers are culturally expected to follow coursebooks closely, taking them as authoritative sources of language and methodology rather than be creative about materials development.

2.2. Teacher technopedagogical and digital literacies

Preparation of teachers for technology-mediated teaching and building their digital literacies, or CALL teacher education, is a topic broadly researched in the literature. Studies have investigated, among others, approaches to and modes of instruction (Bauer-Ramazani, 2006, Egbert, 2006; Egbert & Shahrokni, 2019), characteristics of the training process (Kessler, 2006, 2007), the role of virtual communities in teacher training (Arnold et al., 2007) or ICT skills buildup as a prerequisite for L2 teacher education (Desjardins & Peters, 2007). The end product of the training, teacher digital-pedagogical literacy, makes teachers ready to plan, organize and assess technology-mediated teaching.

Building teachers' digital literacy needs to be anchored in established learning theories as digital literacy is a set of skills, knowledge, and attitudes enabling language teaching within a particular educational framework; thus, sociocultural theory, constructivism, multimodality, and new literacies (Felix, 2005; Hampel, 2006), ecological linguistics (Hoven & Palalas, 2011), structured cooperative learning (Awada & Burston, 2020) and inquiry-based technological model (Awada & Burston, 2020) have been proposed as solutions organizing CALL teacher curriculum development and informing task design. Moreover, approaches promoting autonomous learning and collaborative problem-solving are also crucial for effective acquisition of CALL teacher literacy (Dooly, 2009) in the communicative learner-centred era (Richards, 2008). According to Richards (2008), proper technology-assisted instruction suggests that teachers approach this increasing challenge more as "designers" of effective and integrated learning rather than mere "transmitters" of skills or information through an add-on use of ICT.

As Meskill et al. (2020) report, in the earliest days of online teaching, educators duplicated textbooks, worksheets, and their recorded lectures and posted these online as their "course." Still, for some contexts (such as Content-Based Instruction as exemplified by Broadaway, 2011), such mirroring a textbook in the online mode might actually lead to enhanced learning, especially when more advanced functionalities of a Learning Management System (in the case of Broadaway, Moodle forums, database, and assignments) are exploited to ensure social constructivist learning. However, it quickly became evident that it is impossible to directly transfer teaching practices from a live, bricks-and-mortar classroom to an online environment. Online course designers were quick to learn that the time, space, and communication forums they had to work with were radically different from traditional classroom modes (Meskill et al., 2020).

Content-wise, the previous studies still call for a need for deeper technological competence, for digital literacy that goes beyond the mere use of ready-made products ('consumer' culture) but that moves towards digital authoring ('maker' culture – Godwin-Jones, 2015). Similar calls have appeared over the years (Chapelle & Hegelheimer, 2004; Godwin-Jones, 2015; Cote & Milliner, 2018), only the technologies advocated have changed – this seems to indicate a need for deeper technological knowledge and the ability to influence the products.

Making a move to online teaching disrupts teachers' pedagogical confidence (Jenkins, 2009), forces them to rethink roles and practices (Hall & Knox, 2009; Meskill & Sadykova, 2011; Richardson & Alsup, 2015), and requires adapting instructional routines to the peculiarities of digital environments (Compton, 2009; Dooly, 2013; Hampel & Stickler, 2005; Meskill & Anthony, 2014, 2015). Therefore, new literacy of a conscious and confident language instructor, according to Meskill et al. (2020), needs to comprise appreciation of authentic and multimodal affordances, finding opportunities for tailored instruction/feedback, and stimulating the emergence of highly productive interactions with students, interactions otherwise not feasible in live classrooms.

Obviously, both teachers' and teacher educators' positive attitudes towards CALL in general and computer-mediated materials development in particular are needed to ensure successful instruction and the implementation of change in the curriculum (Dashtestani, 2014). Teachers' positive attitudes towards CALL materials development help improve their teaching expertise, foster confidence, positive attitudes, and teaching efficiency (Tomlinson, 2003, 2012). Thus, the skills necessary for CALL materials development should be included in EFL teacher preparation programs (Dashtestani, 2014) together with the way teachers' digital mindsets are established by everyday digital practices (Cummings-Hlas et al., 2017; Tour, 2015) influence activity design and lesson planning.

Transfer in CALL teacher education cannot be only about enhancing the level of technological skills implemented in the way anticipated by trainers, but, more importantly, about encouraging teachers "to continue reflective engagement in the ever-changing and complicated digital learning and teaching context" (Chao, 2015, p. 114). Experiencing emerging tools and exploring how those tools may be used in language education help create a proper link between CALL, teacher reflection and critical pedagogy of the 21st century (Chao, 2015). This could take the form of a widely-known TPACK sequence (Mishra & Koehler, 2006), in which in order to integrate technology with content in meaningful ways to enhance student learning teachers design sequences consisting of dynamic relationships between content, pedagogy, and technology (Koehler et al., 2007; Mishra & Koehler, 2006). Metacognitive awareness of their knowledge base in terms of technological content knowledge (TCK), technological pedagogical knowledge (TPK), and TPACK may assist teachers to exploit different technology applications and tools as a source for ICT conceptualization, development, and assessment (Hughes & Scharber, 2008). This means distinguishing knowledge about selecting appropriate CALL tools to present English language materials (TCK), knowledge of how to implement teaching methods and project-based pedagogy with appropriate CALL tools (TCK), and awareness of how to integrate appropriate pedagogy and CALL technology into presenting English learning materials and project-based content (TPACK – Liu & Kleinsasser, 2015).

2.3. Language teachers as corpus designers

There are numerous studies reporting on the applications of corpus-based procedures in foreign language instruction. These range from the use of small corpora tailored to students' needs (Aston, 1997) to promoting large corpus concordancing (Bernardini, 2000; de Schryver, 2002); improving writing performance at lower (Gaskell & Cobb, 2004; Yoon & Hirvela, 2004) and ad-

vanced levels (Chambers & O'Sullivan, 2004); grammar presentation (Hadley, 2002) and inferring rules (St. John, 2001). An extensive body of research can, quite naturally, be found in the area of vocabulary acquisition (Cobb, 1997, 1998) and teaching foreign language reading. This is to be assisted not only by concordancers themselves, but performed in the wider context of a resource-assisted environment, encompassing, for instance, concordancers, dictionaries, cloze-builders, hypertexts, and databases with the interactive self-quizzing feature (Cobb et al., 2001; Horst et al., 2005; see also Lextutor's routines – http://www.lextutor.ca). Some other studies reported on the relation between the effectiveness of corpus-consultation procedures and strategy training (Chambers, 2005; Kennedy & Miceli, 2001; St. John, 2001), indicating the need to reflect on conscious and gradual introduction of the tool in the classroom. A new area of use of corpus linguistics, investigated recently by Lee et al. (2017), is assisting text comprehension through concordance-based glosses.

Previous studies (e.g., Marinov, 2013) showed the applicability of corpus-based learning tasks for building language awareness and pedagogical literacy of future teachers. However, the perspective that needs to be added to that, which is most relevant for the purposes of the present paper, is student-teacher corpus self-compilation (Lee & Swales, 2006). Self-made corpus compilation, also known as DIY concordancing or do-it-yourself corpora, has been selected in the current study as the instructional framework to verify the extent to which student teachers' contextual technopedagogical competence can be developed within a relatively short amount of time in order to enable teachers to become language investigators. Thus, the present study strives to add the dimension of language teachers as language investigators and digital materials developers within Data-Driven Learning to the current body of research.

3. Methodology

3.1. Aim of the research and research questions

The purpose of the present study was to examine the feasibility of the development of technopedagogical competence of prospective English language teachers within the narrowly defined domain of custom-made corpus compilation and linguistic analysis. Data-Driven Learning procedures are sometimes represented in the M.A. programmes in applied linguistics; however, it is much rarer to see the skills of corpus compilation, self-made concordancing, and individual corpus analysis as a part of EFL/ESL teacher development programs. Hence, it was interesting to conduct a small-scale case study research trying to answer the following questions:

1. How feasible is it to introduce a training module devoted to corpus compilation and Data-Driven Learning in the TEFL teacher training curriculum?
2. What are student teachers' perceptions towards corpus linguistics and Data-Driven Learning before and after the module?
3. How do participants view the process of making language-based conclusions on the basis of their individually-made corpora?

3.2. Participants and the research context

The study was conducted in the 2020/2021 academic year in a graduate M.A. in TEFL programme at a middle-sized private university in Poland. The 20 participants were enrolled in a regular M.A. programme leading to full teaching qualifications, which they were taking in the extramural and online mode (due to the COVID-19 lockdown). The specific subject in which do-it-yourself concordancing training was embedded was called "Teaching English as an International Language", and it was aimed at equipping prospective teachers with the knowledge and skills necessary to teach English in the currently changing reality of New Englishes, World Englishes, English as a Lingua Franca (EFL), English as an International Language (EIL) and Business English as a Lingua Franca (BELF) contexts.

The training module comprised four classes spread over the period of 2 months, which aimed at:

1. Class 1 – gaining knowledge of what corpora and concordancing are, learning how to use ready-made corpus tools for researching language, assisting the teaching of vocabulary and grammar, and supplementing one's own language learning;
2. Class 2 – using corpora in the language learning process, executing language learning tasks based on corpus data (error correction, matching, gap-fill, text comparison);
3. Class 3 – operating two selected corpus compilation tools (TextSTAT and AntConc), retrieving texts, compiling texts into text collections, using TextSTAT/AntConc software tools to investigate linguistic aspects of the corpus;
4. Class 4 – presentation of student projects, instructor and peer feedback, reflection on the learning experience.

The training module was preceded with a set of classes of theoretical and practical nature devoted to defining and characterizing EIL, ELF, BELF, Circles of English; studying the changing nature of English in the contemporary world; the linguistic character of New Englishes; native vs. non-native teachers in the EIL classroom as well as the role of culture in the EIL instruction.

The sampling method applied was convenience sampling, as all the student teachers in the final year of the M.A. programme studying at a given university were involved in the study. Since the class was obligatory, they had no opportunity to withdraw from the study, however, they were assured of beneficence and non-maleficence of the actions taken, while the research instruments ensured anonymity and confidentiality of the data collected.

3.3. Research design

In order to gather data for the study and strengthen the validity of the project, the participants were obliged to prepare their self-made corpora and their linguistic investigations as a part of the class assignment. All the time throughout the research process (2 months), the instructor would give individual support to all participants who desired that in terms of software operation, source selection and evaluation as well as linguistic analysis.

The research adopted the case study framework, with action research as the most appropriate way of collecting data given the purposes of the current investigation. Pedagogical intervention in the form of teacher-guided tasks based on selected corpora (mainly Lextutor.ca and English-corpora.org) was organized in a pedagogical sequence in order to give student teachers the opportunity to experience Data-Driven Learning as language learners. Whole-class tutorials and individual consultations were offered to build software operation skills. Individual research by student teachers followed to lead to project roundup.

The study used multiple ways of collecting data in order to balance a small and unrepresentative sample. Most importantly, pre-treatment and post-treatment questionnaires, learner diary

and group interviews were used to find answers to the research questions.

3.4. Results and findings

As regards the applicability of Data-Driven Learning and do-it-yourself corpus compilation in the teacher training process, the participants were generally in favour of using it (almost two-thirds), with 12.5% against and 25% not sure. It is clear that the short span of the training program, as well as lack of previous background in corpus linguistics, were the reasons why one-third of the participants did not become convinced of the benefits of adding the skills of individual linguistic research to their technopedagogical literacy. This was also evidenced in qualitative comments expressed in teacher diaries:

> To my mind, it is a useful tool in collecting texts, verifying particular words or frequency of these words so application corpus linguistics and Data-Driven favours dealing with the second language.
>
> I think it's interesting to find out more about corpus-based teaching, but in Polish schools it would be very difficult to apply that knowledge in practice (as an English teacher).
>
> I've honestly found it very difficult at the beginning and wasn't sure what is expected from me, but when I've worked on my own corpus, it turned out to be a lot of fun. I would definitely prefer to have a separate subject on it instead of being a part of a bigger course. The knowledge gained will be definitely beneficial in my future teaching.
>
> As an English teacher (language investigator) and a learner, I can use it for learning as well as teaching purposes.
>
> It should be a part of teacher training because it raises the awareness about the language. It is a chance to get inspired and create useful materials.

Just one comment of the negative kind "I do not how I can apply this knowledge at school", together with an overwhelming number of positive responses and remarks, seems to indicate the perceived usefulness of do-it-yourself corpus compilation in teacher training.

As regards their future professional practice (as a language teacher, language specialist, translator, or interpreter), the participants saw much greater usefulness of the proposed procedures in their future work as advanced learners of English (62.5% strongly in favour) than for translation (50% strongly in favour). Even fewer teacher trainees thought they would use DDL in their teaching or at companies (37.5% strongly in favour, plus a similar number quite positive – "could be the case"). As before, very few participants (12.5%) were very clearly against independent corpus study, choosing "I see absolutely no reason to do it" both in the case of learning and teaching English.

Those perceptions clearly reflect the examination of teacher trainees' skills after the training program – the same small number of participants (12.5%) reported that (despite intensive training as described above) they could not find relevant texts for their investigation purposes and they could not load them into their own corpus. The overwhelming majority (almost 90%) reported acquiring the skills of using different online lexical tools, knowledge of what a corpus and a concordancer is, looking up words in a ready-made corpus, and loading texts into their own corpora. A slightly lower percentage (62.5% for answers "very true of me" and "rather true of me") was found for finding relevant texts for participants' corpora. It becomes evident, then, that the training program was relatively successful in building technical literacy. On the other hand, evaluation of sources in terms of authority, relevance, representativeness, range, and currency caused trainees much greater problems.

Apparently, these perceptions were not dependent on the quality or length of the training program, which was highly evaluated as sufficient in terms of time, activities and forms, software and support materials (between 75 and 80% of "Just enough" answers, with equally small percentages for "Could get some more" and "Was rather insufficient", and with virtually no "Was of no use at all" responses). As regards computer procedures, finding corpora online, making simple queries, finding texts of interest and preparing and uploading texts proved to cause no problems at all for half of the participants, while the other half chose the answer "I managed somehow".

4. Discussion

As demonstrated by the results of the present small-scale study, teacher research skills assisted by corpus linguistics and Data-Driven Learning are generally perceived as a useful component of teacher literacy. The participants, in general, appreciated being equipped with the knowledge, skills, and tools to conduct independent investigations about the English language, which proves especially useful when learners' specific needs enable the teacher to narrow down the range of situations, contexts, topics, and texts. In such a case, for instance, in a Languages for Specific Purposes (LSP) classroom, self-made corpus compilation and data extraction are viewed as important (if not necessary) steps to successful curriculum development and lesson preparation.

Even though introduced to corpus linguistics for the first time, the participants were relatively quick to master the technical skills needed to make queries in publicly available corpora such as those available at Lextutor or English-corpora.org. Also, the two selected pieces of software for do-it-yourself concordancing, namely TextSTAT and AntConc, proved easy to master, even though the whole training process was conducted exclusively in the distance mode due to COVID-19 university lockdown. Thus, as the results of the survey show, student teachers' contextual digital literacy within the corpus tools was successfully accomplished throughout the training module as described in the study.

The other component of technopedagogical literacy is the whole sphere of pedagogical/didactic skills, which encompasses the ability to use the tools, procedures and data of technical operations in the teaching process. Here, thanks to the use of the method of experiential learning (when student teachers were placed in the shoes of learners and participated in corpus-based learning tasks themselves), they were able to find out the benefits of Data-Driven Learning and were more likely to implement that way of learning in the future.

However, the greatest obstacle to the acquisition of teacher-researcher literacy as described in the present paper does not seem to be the digital sphere or pedagogical sphere, but rather the understanding of what Data-Driven Learning can be useful for and how independent language study can assist language teaching. Thus, one could call this insufficient teacher autonomy – after teacher education focused mainly on acquiring skills of effective coursebook-based instruction and skillful coursebook content delivery, student teachers find it difficult to change their mindset to become investigators of the target language. This may also be due to a need to find easier solutions, feeling that relying on coursebook content removes some part of the responsibility for course design off their shoulders.

5. Limitations to the current study and final conclusions

Small-scale studies like this one always fall short of universality, and making generalizations on the basis of a small convenience-selected sample would be highly inappropriate. The most serious limitation of the present study, thus, is the small sample that took part in the research, the absence of the control group (due to the too low number of students taking the M.A. in TEFL programme) as well as reliance on qualitative methods and data collection techniques, which are always prone to subjectivity. However, since the purpose of the study was not to make generalizations about the whole student-teacher population but rather to describe a certain teacher training framework and expose certain problems that might arise during it, the study should be regarded as valid.

Language teacher literacy for the 21st-century classroom cannot be limited only to technological and pedagogical competence, even though smooth integration of these two areas will surely help design innovative computer-mediated lesson sequences and instructional materials. What seems to be more important, then, seems to be developing teacher's autonomous approaches to language instruction, building attitudes and skills of researching learners, classrooms, and language to adapt teaching to the specific nature of the particular classroom context, so characteristic of the post-method era (Kumaravadivelu, 1993). Thus, "maker culture" advocated by Godwin-Jones (2015) does not pertain to digital materials only – more importantly, it encompasses also the subject matter content, the current state of the English language, and the changes the language is up to when used in different contexts and by different speakers.

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