

DEVELOPING TEACHERS' RESEARCH LITERACY

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INTERNATIONAL PERSPECTIVES

Editors: Pete Boyd, Agnieszka Szplit, Zuzanna Zbróg

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Prologue

PETE BOYD, AGNIESZKA SZPLIT & ZUZANNA ZBRÓG

There is overwhelming agreement, internationally, that the quality of teaching is a fundamental element of effective education systems. Within this consensus however, the contribution of teachers themselves is somewhat contested. A teacher might be positioned along a continuum between a technician, delivering evidence-based practice, and a professional, using research-informed judgment to decide what and how to teach. Clearly, the resources available within national education systems affect teacher recruitment, initial education, working conditions, retention, and continuing professional development. There are also significant policy and cultural differences between national contexts, for example the extent of centralised national prescription of curriculum content and the status of teaching as a profession within society. This book examines the concept of ‘teachers’ research literacy’ by drawing on international critical perspectives on policy and practice in initial teacher education and in professional development for experienced teachers. The issue of teachers’ research literacy is important internationally because it has considerable implications for policy, teacher recruitment and development, school leadership and classroom practice. Building teachers’ capacity for professional inquiry and professional judgment within the development of research literacy is particularly important in our post-truth era. In this era, feelings or personal beliefs are often considered to be as important as the facts, and science denial has become part of ideological persuasion leading to a post-truth politics (McIntyre, 2018).

Part one of the book focuses on the concept of teachers’ research literacy. In provisionally defining the central concept of teachers’ research literacy in chapter one, Pete Boyd argues that a research literate teacher must have a capacity for professional judgment in deciding what and how to teach.

Within this, he discusses three key elements: the complexity of the field of education and of classroom teaching including the varying contexts in which teachers work; the philosophical issues of purposes and values underpinning education systems and teaching; and the contested nature of theory and research, ways of knowing, within policy and practice in education and teaching. Chapter one expects teachers' professional judgment to include everyday in-action decisions but also a capacity for professional inquiry, leading to the development of research-informed practice and change. In this chapter, a provisional working definition of teachers' research literacy is presented as: 'Demonstrating a reasonable understanding of the contested nature of 'ways of knowing' (epistemology) within the field of education, including appreciation of purposes and values and the interplay between research and practical wisdom in deciding what and how to teach, as well as practical skills in critically evaluating different sources of research evidence as an element of professional inquiry into practice.' To provide a broader systematic consideration of what we know about teachers' research literacy, Leah Shagrir in chapter two provides a literature review focused on seven carefully selected studies. She finds that despite the value and ambition of teachers regarding engagement with theory and research, many currently do not feel they have sufficient research literacy to support professional inquiry and development of research-informed practice.

Part two of the book focuses on development of student teachers' research literacy. It is worth noting at this point that language is a powerful influence on thinking. On principle we therefore prefer the terms 'student teacher' or 'beginning teacher' and 'teacher education', which lend themselves to the development of teachers as professionals. These terms seem preferable to 'trainee' and 'teacher training' which imply development of teachers as technicians. In chapter three, colleagues based in the Netherlands, Quinta Kools, Rutger van de Sande and Willem Maurits, investigate student teachers' professional inquiry stance through engagement with Design as research. These authors position 'Design as research' within the range of approaches to teachers' professional inquiry but argue for its distinctive advantages. For example, as an approach it considers all decisions made by the teacher to be an element of design and therefore open for discussion and change and it emphasises enactment so encouraging classroom experimentation and evaluation. The chapter offers a fresh perspective and approach to developing student teachers' research literacy through

professional inquiry. In chapter four, UK based colleagues Karen Blackmore and Jennifer Hatley critically evaluate the affordances of ‘close to practice’ research for the development of student teachers’ research literacy. This approach emphasises collaboration in empirical research focused on an issue identified by an experienced teacher, with the student teacher in this case positioned as researcher. The Netherlands is a leading nation with regard to the development of teacher education and another team based there, Bregje de Vries, Hanna Westbroek, Wilma Jongejan and Anna Kaal, focus in chapter five on the development of student teachers’ personal theories. In this empirical study they develop the definition of teachers’ research literacy beyond interpretation of research literature using goal system representation to help student teachers understand and articulate their personal theories. In chapter six, colleagues based in the Caribbean, Jennifer Yamin-Ali and Murella Samburcharan-Mohammed, investigate the impact of action research journals on student teachers’ developing research literacy. They contribute to understanding of teachers’ research literacy by emphasising the emotional element of working through research-informed change in practice. The final two chapters in this section focus on the knowledge and learning of teacher educators. In chapter seven, UK based colleagues Elizabeth White and Claire Dickerson, provide and evaluate practical resources consisting of ‘narratives of practice.’ These stories are designed to enhance teacher educators’ use of modelling to help student teachers connect theory and research to classroom practice. In chapter eight, colleagues based in Poland, Agnieszka Szplit and Anna Babicka-Wirkus, use a study of university-based teacher educators and a framework of critical pedagogy to analyse how critically reflective learning supports the development of professional inquiry and research literacy.

Part Three of the book focuses on the development of research literacy by experienced teachers. Policymakers often seem to prefer the more contained system of initial teacher education when claiming to address quality of teaching, rather than considering action to support the more complex continued professional learning of the majority of teachers who are in schools making a difference to children. However, in chapter nine colleagues based in Croatia, Dragana Božić Lenard, Josip Juraj Strossmayer and Ivan Lenard, evaluate the perspective of teachers towards a national policy that seeks to encourage lifelong learning for teachers through practitioner research. They find that teachers have a professional

commitment to lifelong learning, are familiar with research procedures and occasionally read scholarly literature. They do not feel they currently have a strong level of research literacy but are open to developing it and being involved in collaborative research. In chapter ten, within the UK context, Hilary Constable and Pete Boyd report on their study of 'master teachers' who have completed a part-time masters level programme. They find that these teachers demonstrate a research literate stance when reflecting on their studies. However, within the interplay of professional learning in their school workplaces the practical wisdom of teachers is privileged and critical engagement with the public published knowledge of relevant theory and research is constrained. In chapter eleven, UK based colleagues Jack Whitehead and Marie Huxtable consider how a Living Educational Theory Research approach supports teachers to develop their research literacy as they realise their educational responsibilities as professional educators. In this approach the lifelong study by a teacher comprises an evolving educational curriculum including development of research literacy. The final two chapters in this section focus on developing the capacity of experienced teachers for professional inquiry and their research literacy. In chapter twelve colleagues based in Israel, Smadar Donitsa-Schmidt and Ruth Zuzovsky, consider attempts to address low levels of teacher research literacy across a national education system. They identify tensions around the value of different forms of knowledge within teacher education but perhaps more significantly also recognise the influence of social status of teachers and their working conditions in relation to developing research literacy. In chapter thirteen, UK based colleague Bethan Hindley focuses on the need to develop the research literacy of school managers and facilitators of coaching and professional learning. Informed by analysis of teacher survey responses and review of the literature she argues convincingly for professional learning through school-based professional inquiry supported by research literate colleagues. In chapter fourteen, Zuzanna Zbróg argues for professionalization of teacher educators' pedagogical approach in response to a national policy requirement in Poland for higher education programmes to prepare students as researchers. These issues of collaboration and leadership of change contribute further to the critical development of the concept of teachers' research literacy. Teaching is arguably a collaborative endeavour and so teachers' research literacy might be considered also to be a collective capacity.

Prologue

Overall, the different authors provide a range of perspectives on teachers developing research literacy through different forms of professional inquiry. Your engagement with chapters of this book may be selective and based on your particular contexts and interests, but we consider the synthesis of these international perspectives to be useful in developing a nuanced and critical perspective and definition of the concept of teachers' research literacy.

CHAPTER NINE

Teachers' Embracing or Resisting Policy on Lifelong Learning through Practitioner Research

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ABSTRACT

Practitioner research is increasingly gaining attraction because of its research and educational potential. Teachers, who are usually not educated or paid to conduct practitioner research, are the ones to be actively involved in this process so their attitudes are crucial. This paper aimed to study Croatian teachers' attitudes towards participating in lifelong learning programs and practitioner research. We conducted a regional survey completed by 372 primary and secondary school teachers whose answers were statistically analyzed. The survey results show that the teachers participate in lifelong learning programs because they believe each teacher should engage in such activities. Even though they are familiar with research procedures and occasionally read scientific/professional literature, the teachers do not feel that they are very research literate. Consequently, they rarely conduct or apply other researchers' results in their classes but are willing to acquire knowledge and skills to do so.

KEY WORDS: Croatian teachers' attitudes, lifelong learning programs, practitioner research, regional survey, SPSS

Introduction

Lifelong learning has been recognized as a cross cutting element inherent to all life spheres, especially education. Aiming to build a knowledge-based society, which can face the 21st century challenges, embedding lifelong learning in education is of the utmost importance because it is perceived as a core component in employees' development. It facilitates efficient adaption to fast economic and societal changes because of which the majority of employers organize some forms of continuous learning. Moreover, some even make it obligatory. In Croatia, all educational workers are required to complete a five-year study program and after a year of an internship, they have to take a national teacher's exam upon which they are qualified for unsupervised teaching. If interested, teachers can apply for a promotion to a teacher mentor, teacher adviser and an excellent teacher adviser; however, they have to meet the continuous learning-based requirements. Pursuant to the New Regulations on Promotion of Teachers, Professional Associated and Principals in Primary and Secondary Schools (2019), in a five-year period, some of the requirements they have to meet are to participate in a lecture or a workshop, prepare students for competitions, coordinate or participate in a project, publish professional or research papers, etc. In order to meet the aforementioned requirements, teachers need to be research literate. During their formal five-year university education, teachers are not educated enough in the field of research literacy, which inspired us to conduct this research and study how research literate Croatian teachers are. Our goal was to find out if Croatian teachers participate in lifelong learning programs since they are not obliged to. We were also interested in the way Croatian teachers acquire research literacy skills, if applicable, whether they conduct and apply practitioner research results in their classes and the reasons why they decide (not) to do that.

Theoretical background

According to Waring and Evans (2015) and Borg (2013), research literacy refers to the teachers' ability to find relevant information, critically scrutinize and synthesize it into a useful working theory. When it comes to practitioner research, research methodology is somewhat different than in academic

research. As Nunan and Bailey (2009) explained, practitioner research involves conducting research in school settings and deals with issues related to teaching and learning for the teacher to better understand one's own work. Teachers are frequently afraid of or discouraged from conducting research and/or are encouraged to be passive consumers of information provided by scientists working outside of the school system (Anwarudding, 2015), which can actually skew teaching practices. Being practitioners, teachers are perceived as implementers of research results published by researchers. There is a growing need to challenge this view because teachers cannot rely on context-free findings without testing or directly applying them in classrooms. Current developments highlight the importance of connecting research and teaching practices (Diery *et al.*, 2020; Bauer & Prenzel, 2012). Based on the idea that empirical evidence is a critical source of information to be applied in teaching practices, an agenda of educating teachers to efficiently use and integrate empirical evidence in their classrooms is an imperative.

According to Brown *et al.* (2017), teachers should use empirical evidence, comprised of teaching approaches, learning strategies and (gloto)didactics, as a resource and orientation for planning and decision-making in their classrooms. Empirical evidence can be acquired in design-based research, action research or lesson study since practitioner research lies between academia-led theoretical inquiries and research-informed practice (Groothuisen *et al.*, 2020). An ever-increasing body of recent research (Joyce & Cartwright, 2020; Farley-Ripple, 2018; Guldberg, 2017; Nelson & Cambell, 2017; Coburn & Penuel, 2016; Kvernbekk, 2016; Mehrani, 2014; Vanderlinde & van Braak, 2010; Biesta, 2007; Broekkamp & van Hout-Wolters, 2007) points to a discrepancy between practitioner research and practice caused by practitioner research not yielding (enough) valid and evidence supported results, producing limited information on practice, not making enough sense for teachers or teachers having limited or no skills to implement practitioner research findings in their classes.

The urgent need to bridge the gap between practitioner research and actual practice is widely reflected in national agendas and initiatives worldwide (Kaur *et al.*, 2020) putting an emphasis on the use of research-driven pedagogy. In promoting evidence-based teaching practices, teacher mentors or second order practitioners play a vital role (Darling-Hammond, 2016; Lunenberg *et al.*, 2014). They are expected to engage themselves in critically reading research literature, grounding their teaching on the best

empirical evidence, conducting practitioner research and disseminating research-based knowledge thus role modelling for future or novice teachers (Diery *et al.*, 2020; Geerdink *et al.*, 2016, Loughran, 2014) and enhancing their teaching skills and students' learning outcomes.

A growing body of recent research (Cain, 2019; Obwegeser & Papadopoulos, 2016; Borg, 2015) demonstrates various benefits of practitioner research such as improved teaching practices, easier data collection and findings implementation, broadening horizons and enhanced collegiality. Therefore, it is essential to develop teachers' research competence (Koustoulas, 2017) and experience in conducting research (Rebolledo, Smith & Bullock, 2016) because such research bring immediate practical value (Al-Maskari, 2015). Scholars have argued for the relevance of using practitioner research. Brown (2015) depicted two values of practitioner research, namely usability and signifying value. Usability refers to addressing classroom-related problems and the latter refers to empirical evidence having superiority over the quality of information sources. As Awang-Hasim *et al.* (2019) and Brown (2017) found, teachers conduct practitioner research to develop better teaching strategies and materials, students acquire learning outcomes, solve specific teaching and learning problems, manage their classes, understand individual differences among students and implement appropriate curriculum and pedagogy. That being said, it is important to study teachers' views and attitudes towards conducting practitioner research, implementing findings in their classrooms, disseminating results among their peers and being research literate as a prerequisite for the said activities.

Methodology

Our research aimed to study Croatian teachers' attitudes towards lifelong learning and practitioner research. We conducted a regional survey sent electronically to the teachers teaching in five eastern Croatian counties where there is one or two teachers' representatives for each school courses. We applied a non-probability convenience sampling method by sending the survey to provincial and federal teachers' representatives who were asked to solicit practitioners (teachers) to respond to the survey. Each school course teacher representative has a mailing list of all teachers teaching that course in his/her district and usually communicates with his/her representees via email so we

estimated that teachers' representatives recruiting representees to complete the survey will be the most efficient way of getting the most surveys completed. However, since the survey was sent only to eastern Croatian counties, where the authors work at and have contacts, the results cannot be generalized to cover all Croatian teachers' attitudes towards lifelong learning and research literacy. Yet, the methodology and sampling technique can be applied to conduct the same research in other Croatian counties. The survey was completed by 372 teachers 86% of whom are female and 14% male teachers, which corresponds to the prevalence of women in the teaching profession in Croatia. 82% of the participants teach in primary schools, 17.7% in secondary and only 0.3% in both primary and secondary schools, which points to primary school teachers being more willing to take part in a survey. In order to avoid biased results, the teachers' working place, as a categorical variable, will not be taken account when conducting statistical tests. Furthermore, as presented in Figure 1, the participants' working experience is equally distributed, which contributes to the research merit.

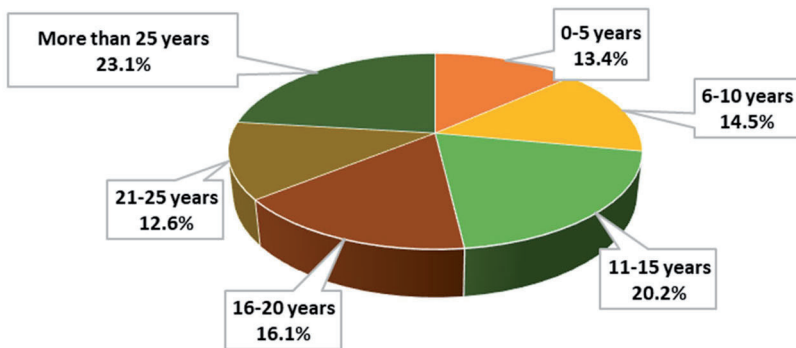


Figure 1. Participants' working experience

As illustrated in Figure 2, the courses our participants teach are not equally distributed, which we did not expect. One unanticipated finding were low numbers of teachers teaching Croatian and foreign languages (English and German teachers) willing to participate in the research because that subset of teachers are not representative of their population unlike other courses' subsets.

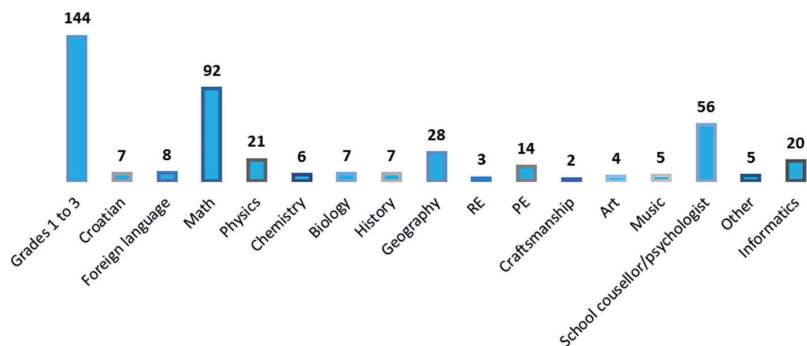


Figure 2. Participants' teaching courses

Another finding we were surprised about is presented in Table 1. Teachers with up to five and ten years of working experience do not meet the working experience requirement to apply for teacher mentors or advisers, respectively, so zeros in these two columns come as no surprise. Low numbers of promoted teachers in other work experience groups do come as a surprise because a promotion results in a significantly higher salary. On the other hand, it requires continual lifelong learning activities a lot of teachers, as our results point to, are not ready to carry out.

		Teachers' promotion				Total
		Teacher mentor	Teacher adviser	Excellent teacher adviser	I have not been promoted	
Working experience	0–5 years	0	0	0	49	49
	6–10 years	3	0	0	53	56
	11–15 years	14	2	0	59	75
	16–20 years	6	7	0	48	61
	21–25 years	13	8	0	25	46
	more than 25 years	16	23	2	44	85
Total		52	40	2	278	372

The survey conducted in a GoogleDocs form consisted of three parts, namely information about the participants' professional life (presented in this chapter), lifelong learning related questions and scientific/professional work part. The questions were both close and open-ended because different parts required (un)guided answers. Upon conducting the survey, the results were uploaded in the *Statistical Package for Social Sciences* (SPSS) where descriptive statistics, Mann-Whitney, independent sample t-test, one-way ANOVA and Spearman correlation test were performed.

Results and discussion

Lifelong learning activities

Even though only a quarter of our participants got promoted, 98.4% of them believe that a teacher should engage in lifelong learning activities. Contrary to Uzunboyly and Hursen's (2013) findings on novice teachers being more eager to learn, a one-way ANOVA test showed no statistically significant difference ($p = .174$) between our teachers in their attitude towards lifelong learning.

The lifelong learning activities the teachers participated in during the last two years were *workshops/seminars/lectures/webinars* (367 of them), *activities resulting from teacher networking* (118), *conferences and round tables* (100), *mentoring pre-service teachers* (74), *certified educational programs* (49), *conducting research* (34), *school visits/exchange programs* (28), i.e. only three teachers did not participate in any lifelong learning program because they believe a teacher does not have to participate in such activities. The results are not very encouraging because, on average, every teacher participated in two lifelong learning activities in a two-year period or one activity per year.

However, 62.4% of the teachers wanted to participate in more lifelong learning activities. The reasons why they did not participate in more activities are listed in Figure 3.

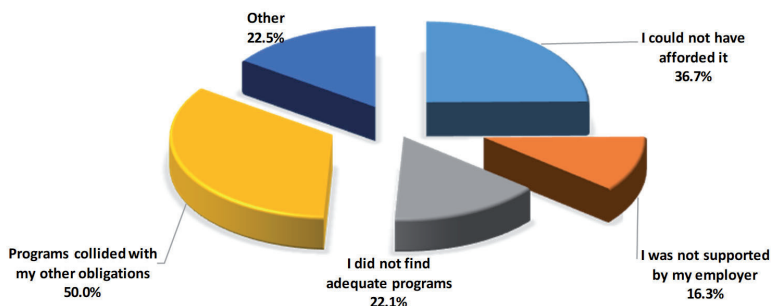


Figure 3. Reasons for the teachers not participating in more lifelong learning activities

Similarly to the findings reported by Livingstone (2015), the top three reasons, namely a lack of financial resources and employers' support as well as collision with other obligations (usually classes) were rather expected. In Croatia, teachers are not allocated any funds to be spent on lifelong learning programs so they either take free of charge ones (if there are any available) or invest in themselves if they are intrinsically motivated to take a certain program. Employers (principals) cannot support teachers financially; however, what they can do is to organize and pay substitute teachers to cover for classes. When collisions happen, teachers usually have to organize their substitutes by asking colleagues to cover for them. It functions in larger schools with more teachers teaching the same course. In schools with fewer students and one teacher teaching a course, there are no substitution options. It is also possible that a teacher refuses to substitute for a colleague for various reasons. The fact that 98 teachers (26.3%) paid for a lifelong learning activity speaks in favor of the teachers being intrinsically motivated to learn and acquire new experience. Only two teachers promoted to excellent teacher advisers paid for some lifelong learning activities, which is expected because they reached the highest level of promotion and can participate in free activities when they are organized. The independent sample t-test $t(278) = -2.501, p = 0.013$ points to the excellent teacher advisers not paying for lifelong learning activities like the teachers who still have not been promoted do but given the low number of the former group, the statistical significance cannot be taken into account. Finally, the teachers selected the fields they would like to specialize in as presented in Figure 4.

Teachers' Embracing or Resisting Policy...

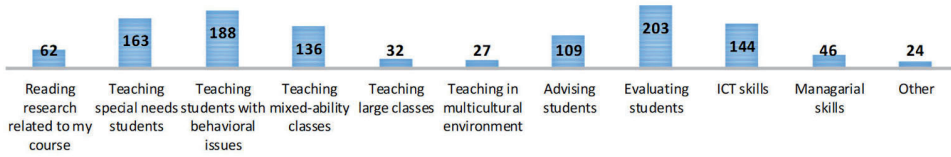


Figure 4. Fields the teachers would like to specialize in

Since the majority of the teachers teach in primary schools, their wishes to specialize in the fields of teaching special needs, mixed-ability and students with behavioral problems were somewhat intuitive and in line with Tovkanets' (2018) results. What we found interesting was that 32 teachers would like to specialize in teaching large classes and 27 in teaching in multicultural environment. Since all classes are of moderate sizes (up to 30 students) and the region where the participants teach is very homogenous culture wise, these findings point to some teachers' readiness to gain experience which they might not be ever able to exercise. The teachers' desires to gain more knowledge in advising and evaluating students and well as ICT skills were expected. Some of the participants might eventually apply for the position of a school principal so timely gaining managerial skills seems like a reasonable investment in one's future. Finally, 62 teachers would like to read updated research carried out in one's respective field. A possible explanation for a relatively low number of teachers interested in reading research results might be related to a usual teachers' practical rather than theoretical point of view. Moreover, Pozilova *et al.* (2020) listed reading as one of five problems in adult lifelong learning. The next subchapter deals with the teachers' views on conducting research so we will see whether this result points to the teachers not being very keen on conducting research or it was just a less attractive option next to an abundance of more desirable ones.

Scientific/professional research

Since what is meant by research can be subjectively interpreted, we opened this subchapter by asking the teachers to provide their definition of conducting research. The responses can be categorized in three groups – general definition, personalized definition and a negative attitude towards

conducting research. Given the fact that the survey was done in Croatian, the following examples are translated and summarized by the authors.

- 1) *Defining a problem, formulating hypotheses, analyzing and publishing results.*
- 2) *Observing a form or behavioral pattern over some time, collecting data, interpreting and drawing conclusions.*
- 3) *Research includes gaining knowledge, professional and personal advancement and pride.*
- 4) *Research is an active and systematic process of studying issues aiming to discover, interpret and apply results in classes.*
- 5) *Enhancing the quality of research area and providing peers with new insights.*
- 6) *Being motivated to keep on learning new things thus progressing in one's field.*

Having read the general definitions, we can conclude that the teachers are familiar with the parts and procedures of the research process.

Some teachers decided to provide more personalized definitions as follows:

- 1) *Research means to study relevant references, conduct a survey and write a paper.*
- 2) *Get to know attitudes of the population I work with. Conducting research results in professional satisfaction.*
- 3) *Learning from experience and applying what you had learnt. This way of learning is more interesting and knowledge remains permanently.*
- 4) *Understanding theory more efficiently.*
- 5) *Fieldwork.*
- 6) *It is more applicable to university professors because primary school students are not used to a research-based way of studying.*

Contrary to the recent results reported by Diery *et al.* (2020) and Reddy *et al.* (2017) who reported positive attitudes of teachers towards conducting practitioner research, not all teachers in our study have positive or even neutral viewpoints on conducting research, which is in line with Drill *et al.*'s (2012) and Korkmaz *et al.*'s (2011).

- 1) *Research means additional tasks and plenty of paperwork.*
- 2) *Spending personal resources and time, which I do not have.*
- 3) *I will not engage in conducting research because no one appreciates it.*

These results might be related to our next research question on the importance and applicability of research results.

Contrary to our expectations, only two dozen teachers believe that conducting practitioner research and applying results in classes have no significant role in a teacher's professional life. This number is even lower than the number of the teachers who expressed negative views on conducting research, which can be interpreted as some teachers believing that conducting practitioner research is important but other factors (e.g. lack of appraisal or financial support) discourage them from doing it. The majority of our responders believe in the importance of conducting practitioner research and applying results in the classes and their reasons can be summarized as follows:

- 1) *Conducting practitioner research nurtures teamwork, fosters networking and enhances development of research, organizational, communication and critical skills of students.*
- 2) *It improves educational process and school culture as well as develops trust between schools and parents.*
- 3) *Based on research results, I plan my teaching activities and design resources.*
- 4) *It pinpoints specific problems and helps us (self)evaluate learning outcomes.*
- 5) *It gives me points for professional development.*

The responses suggest that the teachers are intrinsically motivated to (self) evaluate their teaching methods and learning outcomes in order to adapt to the needs of their students as also found by Diery *et al.* (2020), Darling-Hammond (2016) and Kutlay (2013).

In order to be able to conduct any research, a potential researcher needs to be familiar with previous findings, relevant literature and appropriate research methods. Figure 5 shows that 13.2% teachers read scientific and/or professional literature on a daily basis, 10.2% on a weekly basis, 29% several times a month and 43.8% once a month, which is very encouraging and completely contrary to the results reported by Kutlay (2013) who found that English teachers rarely read research. 14 teachers (3.8%) never do it thus being consistent with the answers to the two previous questions.

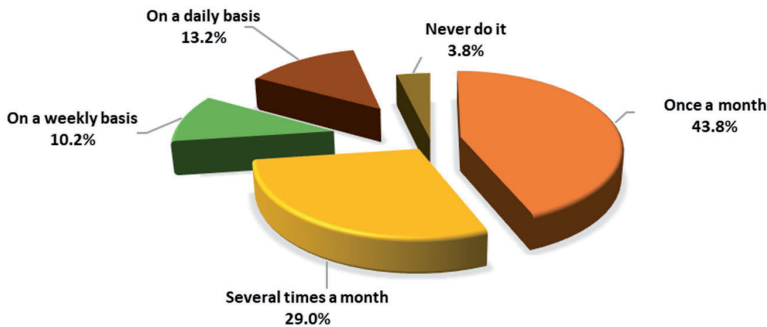


Figure 5. Frequency of reading scientific and professional literature

According to one-way ANOVA test results ($F(3, 368) = .629, p = .000$), all 14 teachers who never read scientific and/or professional literature have not been promoted yet. This statistically significant result can suggest that those 14 teachers do not plan to get a professional promotion or ever conduct any practitioner research. We were interested in learning more about those 14 teachers, i.e. we wanted to examine if those 14 people are novice or more experienced teachers soon to be retired. To our surprise, 3 teachers have up to 5 or 15 years of working experience and 5 have up to 10 years of working experience. To paraphrase, 11 out of those 14 teachers are relatively young teachers, working experience-wise, who will stay in the system for a long time so their unwillingness to read scientific/professional literature at an early career stage is a serious warning sign. Even though we expected that more experienced teachers who are soon to be retired would have a more negative attitude towards reading and practitioner research, our results support those of Tack and Vanderlinde (2016) and Lunenberg *et al.* (2014) who concluded that more experienced teachers perceive reading and conducting practitioner research less demanding than their less experienced colleagues. Furthermore, 13 of the mentioned 14 teachers believe that teachers should engage in lifelong learning activities so they accept proclaimed principles of lifelong learning but refuse to practice that. Lifelong learning principles were probably proclaimed during the teachers' university education; however, it is possible that higher education institutions fail to instruct and educate future teachers on how to engage in lifelong learning activities, which should be changed. 59.9% of the teachers

claim that reading scientific and/or professional literature has a great or an extremely great impact on them as teachers thus being in line with our previous question's results.

The results related to the frequency of the teachers studying literature and conducting research among their students, parents and colleagues are presented in Figure 6.

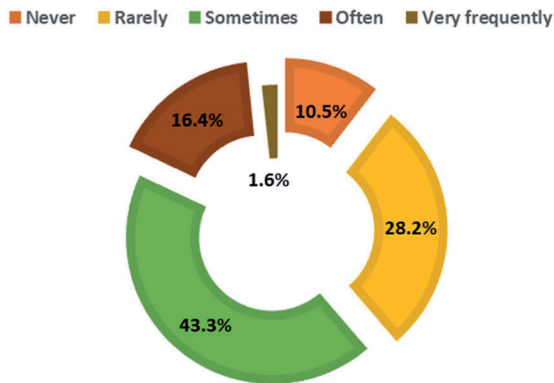


Figure 6. Frequency of conducting research

As expected, the majority of the participants do it sometimes thus being in line with Chow *et al.* (2015) and Kutlay's (2013) research. A statistically significant difference between the groups of the participants was recorded with a one-way ANOVA test ($F(5, 366) = 3.228, p = .007$). Being in line with Sekerci *et al.* (2017) research, a post-hoc Tukey test revealed that the novice teachers (those with up to 5 years of working experience) conduct research significantly less frequently than the teachers with up to 25 ($p = .040$) or more than 25 ($p = .047$) years of working experience, which seems very logical because novice teachers are still getting to know their working environment, responsibilities, teaching methods and plans, etc. and have no spare time to conduct research. A related one-way ANOVA test ($F(3, 368) = 2.616, p = .025$) pointed to intragroup differences with respect to the teachers' job promotion and a post-hoc Tukey test proved that those teachers who still have not been promoted (or are not interested in applying for a promotion) conduct research significantly less frequently ($p = .046$) than teacher advisers. One

of the requirements for professional promotion is to occasionally conduct research so teacher advisers being more interested in gaining points by conducting research is expected. Another significant difference was found related to the teachers' gender. Namely, the female teachers conduct research significantly more ($p = .017$) than their male colleagues as proven by the Mann-Whitney test and reported by Sekerci *et al.* (2017). It seemed logical to check if there is a correlation between reading scientific and/or professional literature, literature having an impact on a teacher and conducting research so we ran a Spearman correlation test, which showed that the more they read scientific and/or professional literature ($rs(372) = .356, p = .048$) or believe it has a great impact on them ($rs(372) = .318, p = .000$), the more likely they are to conduct research. This correlation was statistically significant for all teachers' working experience groups except for the teachers with up to 25 years of working experience ($p = .230$). Many studies (Soodmand Afshar & Hosseini Yar, 2019; Corcoran & O'Flaherty, 2018; Gomendio, 2017) have postulated that practitioner research has increased the level of teaching professionalism in terms of teachers becoming cooperative, increasing their analytical and solving problem skills, boosting their self-esteem, class autonomy and job satisfaction overall so even if they are not obliged by the system, teachers can greatly benefit from conducting research.

The reasons why the teachers decide to conduct research are listed in Figure 7.

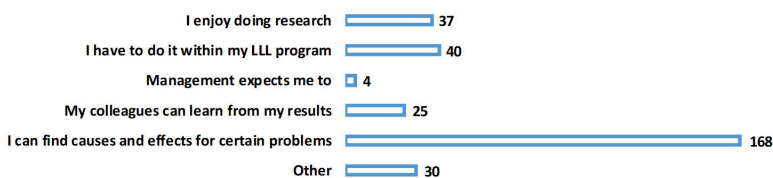


Figure 7. Reasons for conducting research

It is evident that the majority of the listed reasons stem from the teachers' intrinsic motivation to find out causes and effects for certain problems they encounter in their classes thus supporting Kutlay's (2013) results. If they find out causes for a certain phenomenon, they will be able to tackle the issue more efficiently. Some of the teachers also think about their colleagues' benefiting from their results. We believe that this number is a bit low because

teachers are aware that their colleagues are a bit reluctant to use research results in their classes. Since this was a multiple-choice question, the answers *I enjoy doing research* and *I have to do it within my lifelong learning program* could have been chosen by more teachers. Pursuant to Article 8 of the *Guidelines on the progress of teachers, professional associates and principals in primary and secondary schools and dorms*, teachers are awarded fewer points if they conduct research and publish their results in (inter)national journals than if they participate in (online) conferences or webinars, mentor students for competitions, share their class materials on certain educational platforms, volunteer in educational organizations, etc. To paraphrase, teachers are more encouraged to pursue other education-related activities or even discouraged to conduct time-consuming practitioner research. That being said, the fact that only 4 teachers believe their management expects them to conduct practitioner research is logical. here are teachers who do not conduct research for various reasons listed in Figure 8.

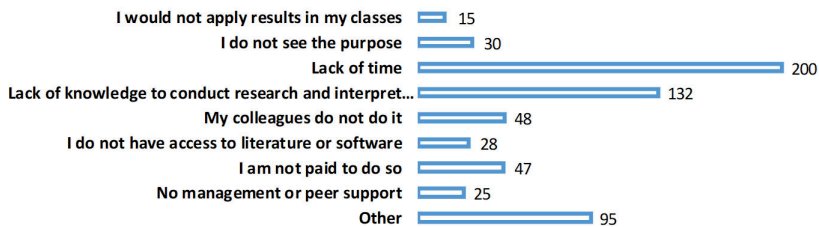


Figure 8. Reasons for not conducting research

Corroborating Diery *et al.* (2020) and Kutlay's (2013) results, the two most chosen reasons are lack of time or knowledge to collect data, evaluate them systematically, interpret statistically and disseminate. During their undergraduate and graduate university education, teachers do not obtain knowledge to conduct research so the reported lack of confidence or time, due to heavy workload, is rather expected. Other three frequently mentioned reasons, namely *my colleagues do not do it*, *no management or peer support* or *I am not paid to do it*, are related to school research culture. In order for teachers to conduct practitioner research, internal and external support from their colleagues, management, higher education institutions and parents are of the utmost importance. Chow *et al.* (2015) found that supportive and

sympathetic management plays a significant role in providing teachers with necessary time and resources (workload reduction) to conduct practitioner research thus establishing research-oriented school culture. In Croatia, if they wish to conduct research, teachers can only do it in their free time by using their own resources (e.g. software for statistical analysis), i.e. principals cannot reduce teachers' workload and consequently, they cannot create inviting research-oriented school culture. Finally, some teachers feel reluctant to carry out practitioner research because they do not see its purpose or they would not apply research results in their classes. It seems possible that the teachers perceive research as something theoretical and done by university professors. As opposed to university professors/researchers who are looking for clarity and coherence, school teachers are interested in pedagogical content knowledge (Groothuijsen *et al.*, 2020). While looking for pedagogical content knowledge, teachers think in a case-based way and consider each situation to be unique so if they conduct research whose findings conflict with their classroom experience, they are inclined to dismiss general research-based knowledge and give precedence to their professional experience (Cain, 2017), which explains teachers' reluctance to conduct research.

Since teachers are not formally educated to conduct research, we asked them whether they would conduct practitioner research if they were educated in collecting data, analysing them statistically and disseminating results. The male teachers had a divided opinion – 50% of them would and 50% would not conduct research if they were educated to. In comparison, 66% of the female teachers would and 34% would not conduct research, which is a statistically significant intragroup difference ($p = .024$). An interested finding was recorded with respect to the teachers' gender and working experience. Namely, in all working experience groups, except for one, more teachers chose that they would do research if they were educated to do so, i.e. the male and female teachers with 6 to 10 years of working experience said that they would not conduct research even if they were formally educated to do so. Once again, young teachers (experience-wise) were recorded to be narrow-minded and reluctant to improve their teaching and analytical skills by hypothetically carrying out practitioner research. Openness to new teaching approaches and novelties is expected from all teachers but this group is on the top of the list. We recorded a strong positive correlation ($rs(372) = .215, p = .000$) between the teachers' desire to conduct practitioner

research if receiving formal education and their wish to participate in more LLL programs, which points to the consistency in their replies. As anticipated, a strong negative correlation was recorded between the teachers' habit of and a wish to conduct practitioner research. However, this does not apply to both gender groups. The female teachers who rarely conduct practitioner research would do it significantly more often if they were educated how to ($rs(320) = -.209, p = .000$). Also, those female teachers who frequently apply other researchers' results in their classes wish to be educated to conduct their own practitioner research ($rs(320) = -.166, p = .003$). The last two statistically significant correlations point to the female teachers' strong desire to get formal education to be able to conduct practitioner research so higher education institutions or teachers' associations might want to consider introducing some courses or workshops on methodology and practitioner research for interested teachers.

Some teachers listed not being paid to do so as one of the reasons for not conducting practitioner research so we asked them if they think that those who do conduct research should be financially rewarded and 80.1% believe that they do. They are very united on this issue, i.e. no statistically significant differences were found in terms of gender ($p = .320$), working experience ($p = .245$) or promotion ($p = .612$). A strong positive correlation ($rs(372) = .229, p = .000$) was recorded with Spearman test – those teachers who would conduct practitioner research if they were educated to do so believe that teachers who conduct research should be additionally paid. This seems reasonable because in addition to gaining some insights, teachers need some external motivation to invest a lot of time and energy into something that is not a part of their jobs. Interestingly, not all teachers think in the same way. Less experienced teachers (three groups of teachers with up to 15 years of working experience, $p = .104, p = .154, p = .280$, respectively) would not consider conducting practitioner research if they were educated to even if teachers are additionally paid for doing it. Being consistent with our previous results, this phenomenon has a research potential so the reasons for less experienced teachers being so reluctant to conduct practitioner research would be worth examining.

The final set of questions was in the form of a five-level Likert scale. The first question was related to a comparison of conducting research and other teaching tasks as presented in Table 2.

Table 2. I have better things to do than to conduct practitioner research

	Frequency	Percent	Valid Percent	Cumulative Percent
I completely disagree	32	8.6	8.6	8.6
I mostly disagree	116	31.2	31.2	39.8
I cannot decide	111	29.8	29.8	69.6
I mostly agree	87	23.4	23.4	93.0
I mostly disagree	26	7.0	7.0	100.0
Total	372	100.0	100.0	

The results show that the teachers are not homogenous in their views on this question, i.e. roughly a third of the teachers believe they have better things to do in classes than conduct practitioner research, a third think that conducting practitioner research is as important as their other tasks and a third cannot decide. After running a one-way ANOVA and post-hoc test, we realized that the less experienced teachers (those teaching from 6 to 10 years) believe that they have better things to do in classes significantly more ($p = .049$) than their colleagues teaching from 21 to 25 years, which is in line with our previous results of less experienced teachers being very reluctant to conduct practitioner research. Spearman correlation test revealed significant correlations – the teachers do not apply other people's ($p = .000$) or their own ($p = .000$) research results in their classes because they think they have more important things to do in classes or because implementing practitioner research results in their classes require knowledge and additional time and energy ($p = .000$) but they would if they knew how ($p = .000$). Intuitively, the teachers with up to 5 ($rs(49) = .577, p = .000$) and from 6 to 10 years of working experience ($rs(56) = .624, p = .000$) believe it would be difficult to implement practitioner research results in their classes. The aforementioned correlations are very significant because they reveal that the main reason why the teachers (especially less experienced ones) do not deal with practitioner research is that they do not know how to conduct it, interpret results and apply them in their classes.

Table 3 lists the teachers' opinion on purposiveness of conducting practitioner research.

Table 3. There is no point in conducting practitioner research

	Frequency	Percent	Valid Percent	Cumulative Percent
I completely disagree	104	28.0	28.0	28.0
I mostly disagree	153	41.1	41.1	69.1
I cannot decide	82	22.0	22.0	91.1
I mostly agree	29	7.8	7.8	98.9
I completely agree	4	1.1	1.1	100.0
Total	372	100.0	100.0	

Evidently, the teachers see the purpose in conducting practitioner research. While there were no gender differences ($p = .684$), a one-way ANOVA test showed significant differences in the opinion of the teachers teaching from 6 to 10 years and from 11 to 15 years ($p = .009$, $p = .015$, respectively) with other groups. To clarify, 23.2% of the teachers teaching from 6 to 10 years and 29.4% of those with 11 to 15 years of working experience believe that it is pointless to conduct practitioner research while the percentages in other groups are around 5. Since there is a strong positive correlation ($p = .000$, $p = .000$) on the purposiveness of conducting research and difficulties caused by implementing results in their classes, we can conclude that the aforementioned groups of teachers do not see the point of conducting practitioner research because they do not know what to do with results.

In a recent study, Cain (2017) claimed that teachers consider students and classes to be specific and unique cases so we decided to study this hypothesis by asking our participants whether they perceive each student generation as unique or similar to others. 57.8% disagree, 20.7% agree and 21.5% cannot decide whether generations are alike. Upon splitting the file based on the teachers' gender, we got the results shown in Table 4.

Table 4. Similar teaching methods can be applied to every student generation

Gender		Frequency	Percent	Valid Percent	Cumulative Percent
Men	I completely disagree	9	17.3	17.3	17.3
	I mostly disagree	13	25.0	25.0	42.3
	I cannot decide	11	21.2	21.2	63.5
	I mostly agree	15	28.8	28.8	92.3
	I completely agree	4	7.7	7.7	100.0
	Total	52	100.0	100.0	
Women	I completely disagree	58	18.1	18.1	18.1
	I mostly disagree	135	42.2	42.2	60.3
	I cannot decide	69	21.6	21.6	81.9
	I mostly agree	52	16.3	16.3	98.1
	I completely agree	6	1.9	1.9	100.0
	Total	320	100.0	100.0	

It is evident that the female teachers disagree (60.6%) with perceiving and teaching each student generation equally while almost the same percentage of the male teachers (dis)agree on this question. This gender difference might stem from psychology of women adapting to other people and their needs more often than men; in our case, this gender difference, recorded by Mann-Whitney test, is statistically significant ($p = .013$) and corroborated the research of OECD (2009).

Policy makers, management and teachers alike intuitively accept the idea of engaging parents in some school activities because parents' awareness and involvement can have a positive effect on students' academic life (won Kim, 2019; Nix *et al.*, 2018; Bierman *et al.*, 2017). Based on their experience, we asked the teachers if parents and teachers would positively react on conducting practitioner research summarizing the results in Table 5.

Table 5. Students and parents would not positively react on conducting research

	Frequency	Percent	Valid Percent	Cumulative Percent
I completely disagree	63	16.9	16.9	16.9
I mostly disagree	114	30.6	30.6	47.6
I cannot decide	118	31.7	31.7	79.3
I mostly agree	62	16.7	16.7	96.0
I completely agree	15	4.0	4.0	100.0
Total	372	100.0	100.0	

The teachers' answers are dispersed between three options even though more of them believe that students and parents would positively react on conducting practitioner research. The third of them cannot decide pointing to the possibility that the teachers have not conducted practitioner research yet. A one-way ANOVA and post hoc Tukey tests revealed that the opinion of the teachers with 6 to 10 years of working experience significantly differ from the opinion of their most experienced colleagues ($p = .022$). Namely, 33.9% of the teachers teaching 6 to 10 years believe that students and parents would not positively react to conducting practitioner research compared to 14.3% of their most experienced colleagues, which is in line with our previous results on the former groups of teachers. Additionally, upon running Spearman correlation test, we found a statistically significant negative correlation ($rs(56) = -.310, p = .020$) revealing that the teachers teaching from 6 to 10 years do not conduct or implement their or their colleagues' research results in their classes so they cannot have any predictions on students and parents participating in research because they had never (or rarely) conducted it.

The last question, whose answers are shown in Figure 9, illustrates what the teachers believe others expect them to do.

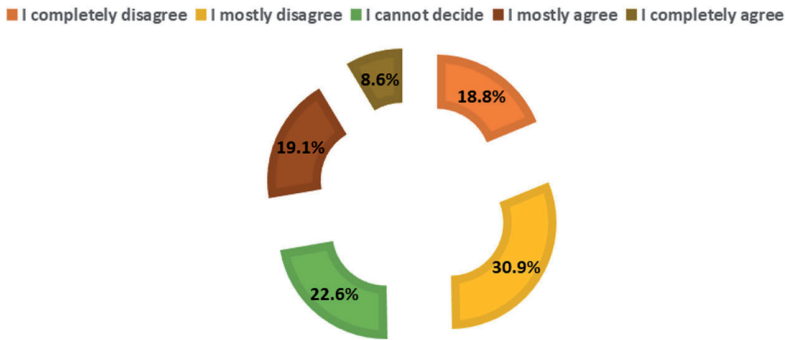


Figure 9. Teachers are expected to teach and not conduct practitioner research

49.7% of the teachers disagree with a view that teachers are only expected to teach thus supporting Cekić *et al.* (2018) research results. There are no statistically significant differences in terms of gender ($p = .324$), work experience ($p = .225$) or promotion ($p = .638$), which leads to a conclusion that they are generally aware of a possible (future) paradigm shift, the necessity to conduct practitioner research and apply research results in their classes.

Conclusions

The aim of this research was to study Croatian teachers' attitudes towards participating in lifelong learning programs and conducting practitioner research. Upon carrying out a regional survey completed by 372 teachers, we conducted a series of statistical tests to analyze their answers. We learned that primary school teachers, especially those teaching from grade 1 to 4, are the most and language teachers the least eager to participate in research.

Almost all teachers believe that a teacher should engage in lifelong learning programs. They mostly participate in free of charge lectures/workshops/seminars/conferences, activities stemming from teacher networks or they mentor pre-service teachers. They are willing to participate in more lifelong learning programs but they are not supported by their employers in terms of their classes being taught by substitute teachers while they are away. The teachers are mostly interested in specializing in

the fields they directly work in; however, some of them would like to gain knowledge and skills to be potentially used in the future.

When it comes to conducting practitioner research, our study showed that the teachers are familiar with research procedures; they occasionally read scientific and professional articles and believe in the importance of applying research results in their classes. A disturbing finding is that the teachers who are the least eager to read scientific/professional literature and conduct practitioner research are teachers who will be in the system for a very long time and possibly negatively influence a lot of generations if they teach them solely by using traditional methods and not applying more recent approaches suggested by recent literature. They try to find an alibi by claiming that students and parents would not positively react to practitioner research, which is something they cannot possibly know because they had never (or rarely) conducted research. Additionally, experience-wise young teachers think that conducting educational research is pointless because they do not know how to conduct research, interpret results or apply them in classes, i.e. if they were educated or instructed how to do it, they would probably be more eager to do it. Especially female teachers who are more willing to acquire new skills and adapt to each student generations' needs. Therefore, provincial and federal teachers' representatives should initiate and try to organize lectures/workshops on research literacy and methodology.

An encouraging finding is that when they do, the teachers conduct practitioner research because they are intrinsically motivated to learn about their students' problems and tackle them and not because their superiors or the system requires them to do so. A lack of time or knowledge are the main reasons why they decide not to engage in carrying out practitioner research. These problems can be solved by providing teachers with formal training on research literacy and methodology and reducing their workload or financially rewarding those who invest time and energy into (self) educating and conducting research, which the teachers would support. Counterintuitively, less experienced teachers are the most reluctant to improve their teaching and analytical skills even if they would be financially rewarded for that. Perhaps they work in schools with poorly developed research culture and/or are surrounded by unmotivated colleagues, which can be tried to be solved by promoting research activities and results applicable potential. Also, during their one-year internship, pre-service teachers should be exposed to and encouraged to engage themselves in

more research literacy related theoretical courses and practical workshops, which policy makers and stakeholders could make obligatory. Educating pre-service teachers would increase the number and quality of practitioner research, which would consequently enhance the quality of classes.

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