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EDITORIAL

With this issue you are holding in your hands, Journal on Efficiency and Responsibility in Education and Science (ERIES Journal) has finished another exciting year. The increasing international awareness about the journal is reflected in the last volume of the year 2019 (vol. 12, no. 4), which includes four articles from Indonesia, Turkey and the Czech Republic. The central topic of this issue is self-efficacy and quality of education results in education. Education quality has many definitions, but in most of the cases, it is linked to education institutions' ability to prepare their graduates to perform well in their future professional life. This process has three basic parts.

First, there is the important part of the education institution itself. It is key that the institution provides education of a high quality that consequently attracts new students. As some study programs have stronger support by the demand on the market, not all educational institutions have similar financial, technical and personnel resources. However, it is crucial that the heads of each institution understand the strong and weak parts of their education system, as well as opportunities for developments.

Second, teachers' attitude in their teaching plays a very important part in the education process as well. Teachers must be willing to further educate themselves to follow current students' necessities. They must be confident to exert their own motivations to transfer their knowledge to their students. The more motivated the teachers are, the bigger the effect on students' knowledge is.

Last but not least, students themselves must be motivated to learn. Many attributes affect the motivation, such as teachers, schoolmates, parents, as well as siblings (taking into account the personnel part only). Although not all students have the same support in their environment, their self-efficacy is one of the most important parts in their learning process. To conclude, there must by synergy between all three parts in order to achieve excellent learning outcomes, which is true for primary, secondary and higher education level.

The first article from Leonnard (IPMI International Business School) explores the relationship among e-service quality, e-trust, e-satisfaction and loyalty of students from public and private universities in Indonesia. Total of 304 undergraduates were asked whether they used one of the universities' information media of web sites, portals, or social media and the type of social media that were most frequently accessed. Their responses were analysed using the Structural Equation Modelling. The findings revealed that efficiency and fulfilment significantly affect e-satisfaction, while fulfilment and privacy significantly affect e-trust. Fulfilment has the most substantial effect on e-satisfaction and e-trust that supports prior studies. The findings of this study are useful for decision-makers at the university regarding the importance of online sites to create loyalty. The findings suggest the importance of increasing capacity and improving facilities related to universities' web sites, portals, and social media.

The second article from Hülya Yıldızlı (Istanbul University) investigates the relationship between teachers' goal orientations for teaching and their attitudes towards their job through measures of self-efficacy and burnout. The analysis includes 495 teachers, who worked in the Central Anatolia region of Turkey, from different school levels (primary, secondary and high school), as well as from different subjects (mathematics, Turkish, science, etc.). The data were collected between 2017 and 2018. Results reveal that teachers' mastery goal orientation through self-efficacy and burnout measures is a positive predictor of attitudes towards teaching. On the other hand, teachers' work-avoidance orientation through self-efficacy and burnout measures is a negative predictor of attitudes towards teaching.

The third article from Kristýna Krejčová, Hana Chýlová, Pavel Michálek (Charles University and Czech University of Life Sciences Prague) analysed the role of siblings in academic self-efficacy. For this purpose, the authors analysed responses of 507 students related to their level of school success, the energy needed to study something new, perceived educational dispositions and career ambitions. Out of the total, 341 students have one sibling, 133 have two siblings and the remaining 33 students are from 4 or more children families. The results indicate differences in all observed categories (gender, family order, age-distance), as well as indicate relatively better academic self-efficacy (compared with a sibling) by females and students with a brother. Similarly, the higher level of academic self-efficacy was detected by older siblings and respondents with a longer age-distance between respondents and their siblings.

The fourth article from Kateřina Tomšíková, Helena Hudečková, Karel Tomšík (Czech University of Life Sciences Prague) investigates the effect of innovative teaching methods in agriculture high schools in order to enhance their attractiveness for students. The analysed sample consisted of people who had a stake in the subject matter of the study Education and Communication Teaching of Practical Subjects (UPV) and Teaching of Specialized Subjects (UOP) in part-time form of study at the Institute of Education and Communication at Czech University of Life Sciences Prague. A total of 141 questionnaires were distributed to 104 UPV students and 37 UOP students. The results reveal the necessity to introduce new trends and topics that are not only linked to agricultural, but also to other activities in the management of natural resources. Further, it is important to stimulate greater interconnection of specific teaching subject with practice, as well as closer cooperation of actors at local level, which have a potential to enhance attractiveness of secondary education in the Czech Republic.

We hope that all our readers will find this last issue of the year 2019 interesting. We also hope that ERIES Journal will contribute to the field of efficiency and responsibility in education as it has contributed so far. With the end of the year 2019, we would like to thank all the authors who have submitted their manuscripts to ERIES Journal, to all reviewers who carefully reviewed all these manuscripts, as well as to all members of the Editorial board who contributed in increasing the ERIES Journal quality.

We wish you Merry christmass and all the best in 2020.

Sincerely

Martin Flégl
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CONTENT

EXPLORING THE RELATIONSHIP AMONG E-SERVICE QUALITY, E-TRUST, E-SATISFACTION AND LOYALTY AT HIGHER EDUCATION INSTITUTIONS

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ABSTRACT

We examine the effect of e-service quality through E-S-QUAL dimensions of efficiency, fulfilment, system availability, and privacy on e-trust, e-satisfaction and loyalty of students from public and private universities in Jakarta, Indonesia. A total of 304 undergraduates was employed as respondents, and the hypotheses were tested using Structural Equation Modelling (SEM). The findings revealed that efficiency and fulfilment significantly affect e-satisfaction, while fulfilment and privacy significantly affect e-trust. Fulfilment has the most substantial effect on e-satisfaction and e-trust that supports prior studies. Moreover, the relationships between e-trust, e-satisfaction, and loyalty are confirmed. Theoretical and managerial implications are presented.

KEYWORDS

E-service quality, E-trust, E-satisfaction, loyalty, Structural Equation Modelling

HOW TO CITE

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Highlights

- *The effect of e-service quality on e-trust, e-satisfaction, and students' loyalty through E-S-QUAL dimensions and Structural Equation Modelling (SEM) approach.*
- *Efficiency and fulfilment significantly affect e-satisfaction.*
- *Fulfilment and privacy significantly affect e-trust.*
- *E-trust and e-satisfaction significantly affect students' loyalty.*

INTRODUCTION

The loyalty of universities' students has become a noteworthy issue to survive in highly competitive landscapes and to compete with other universities (Leonnard, 2018a). Both public and private universities begin to develop their specific strategies with a focus on their students (Leonnard, 2018b). Besides, the existence of word ranking universities has created privileges in some universities with claims of quality and service better than others. It turns out that loyalty and its key predictors have become the topic of interest in literature since a long time ago. Factors such as service quality (Sembiring, 2013; Rojas-Méndez and Vasquez-Parraga, 2015), image (Brown and Mazzarol, 2006), trust (Rojas-Méndez et al 2009; Leonnard and Susanti, 2019) and satisfaction (Bergamo, Giuliani and Galli, 2011; Leonnard et al., 2015; Giner and Rillo, 2016; Leonnard, 2017) are found to be the main predictors of university students' loyalty.

The presence of the internet has brought revolutionary changes in the way how goods and services are traded, as well as the higher education service. The university has shifted from traditional service quality to electronic service quality (e-service quality). The activities such as universities and course enrolment, course delivery, course support, electronic libraries, payment confirmation, regular information and promotion such as international programs and courses offered to prospective students have been handled online. The media adopted are no longer limited to universities' web sites, but are expanding into universities' web portals and social media. Intensive studies on the effect of e-service quality on e-satisfaction and e-loyalty and the

moderating effect of variables such as trust, perceived value, purchase size, and motivation have been carried out in the last 20 years. The relationship of efficiency, fulfilment, system availability and privacy with e-satisfaction has been significantly proven by prior studies. Quan (2010), Sheng and Liu (2010), and Tandon, Kiran, and Sah (2017) confirmed that all of the dimensions have positive effects on e-satisfaction. Sheng and Liu (2010), Ariff et al. (2013) and Ting et al. (2016) also signified that fulfilment has a positive effect on e-satisfaction. Mohammed et al. (2016) used information quality indicators that represented fulfilment and interactivity and reliability to represent system availability. The results of the study indicated that efficiency, information quality, interactivity, reliability and privacy have positive effects on e-satisfaction of e-tourism services. Interactivity and reliability have a dominant effect on e-satisfaction. Conversely, efficiency and privacy have the weakest effect on e-satisfaction. The results validate the study of Wolfmbarger and Gilly (2003) and Swaid and Wigand (2007). Furthermore, Kim, Jin, and Swinney (2009) found that efficiency does not have a significant effect on e-satisfaction. In terms of e-trust predictors, Kim, Jin, and Swinney (2009), Hansen and Jonsson (2013), and Chek and Ho (2016) found that both variables of fulfilment and privacy have significant effects on e-trust.

Moreover, e-satisfaction and e-trust are antecedents of loyalty (Anderson and Srinivasan, 2003; Kim, Jin, and Swinney, 2009). Reichheld and Schefter (2000) revealed that e-trust is the critical predictor of consumer loyalty to online sites. The argument has also been supported by Pitta, Franzak, and Fowler (2006) and Kim, Jin, and Swinney (2009). The effect provided by the variable is not only in a direct term but also by indirect effect through e-satisfaction (Anderson and Srinivasan, 2003). Jin and Park (2006) and Kim, Jin, and Swinney (2009) have proven that e-trust has a positive effect on e-satisfaction. However, most of the studies are conducted practically on e-commerce and online shopping sites. The relationship between these variables in the educational sector is still not clear. In this study, we examined the contributions of e-service quality, e-trust, and e-satisfaction to student loyalty of state and private universities in Jakarta, Indonesia.

MATERIALS AND METHODS

Data collection and analysis

The selection of universities in this study was based on a convenience sampling method at a state university and two private universities in Jakarta, Indonesia. Respondents selection is based on a random sampling method. All respondents are undergraduate students. The online sites are websites, portals and social media with dual languages – Bahasa and English. A total of 304 data from respondents was collected, and that was analysed through Structural Equation Modelling (SEM) using AMOS 23. In the survey, respondents were asked whether they used one of the universities' information media of web sites, portals, or social media and the type of social media that were most frequently accessed. It is to ensure that respondents are fit to provide their perceptions of the items asked in the questionnaires. A total of 63.48% of respondents were female, and 36.53% were male. Most of the respondents were between 20 and 23 years old (93.42%), 23 to 26 years (5.59%), 26 to 29 years (0.65%), and only a person was more than 30 years old (0.32%). The most frequently accessed types of university media were social media (43.09%), portals and websites (28.61% and 28.28%, respectively). Instagram was the most frequently accessed type of social media (88.81%), followed by Facebook (5.59%), and Twitter (2.30%).

Research Instruments

Indicators of e-service quality (E-S-QUAL)

Several methods have been developed to measure e-service quality. In the beginning, the method was purposed to measure e-service quality of online shopping sites. Some popular methods are WebQual (Barnes and Vidgen, 2002), which is used to measure e-service quality in e-commerce by employing five indicators: design, usability, trust, information, and empathy. Another method is SITEQUAL (Yoo and Donthu, 2001), which consists of four indicators: ease of use, aesthetic design, processing speed, and security. However, the method provides a disadvantage that respondents can do the assessments without completing purchases. Thereafter, Wolfinbarger and Gilly (2003) developed eTailQ, which consisted of four indicators: website design, fulfilment or reliability, security, and customer service. However, both website design and customer service are considered to be less consistent and distinct. To improve and complete the shortcomings in the previous methods, Zeithaml, Parasuraman, and Malhotra (2002) suggested five indicators of e-SERVQUAL which consisted of content and information availability, ease of use, privacy, graphic style, and reliability. Later in 2005, these indicators were refined into a new method called E-S-QUAL with four indicators of efficiency, fulfilment, system availability, and privacy (Parasuraman, Zeithaml, and Malhotra, 2005). It is developed to evaluate e-service quality of online shopping sites, not on other forms of internet sites such as portals, free download sites, job sites or newspaper sites aimed at particular purposes such as advertising other than online shopping (Parasuraman, Zeithaml, and Malhotra, 2005).

Some other methods, such as NetQual (Bressolles and Nantel, 2008), ESELFQUAL (Ding, Hu, and Sheng (2011) were developed after that period. However, most of the methods are aimed to evaluate e-service quality of online shopping sites. Moreover, there were E-GOVSQUAL-RISK (Rotchanakitumnuai, 2008), E-GOV-SQUAL (Kaisara and Pather, 2011), PUBLIC VALUE OF E-GOVERNMENT (Karunasena and Deng, 2012) to evaluate e-service quality of public sectors, and LibQUAL which is performed for libraries (Zhang and Bi, 2017). Correctly, in the higher education institutions (HEI), e-service quality has been used to evaluate academic libraries by using e-SQ (Amin and Ahmad, 2012) and e-SERVQUAL to measure student perceptions of universities' web sites (van Iwaarden et al

2004). Lee, Choi, and Jo (2009) used the end-user computing satisfaction model consisting of user ability, design, playfulness, and support services available to evaluate student satisfaction of the university's portal. Chen (2011) and Tella and Bashorun (2012) used the dimensions of ease of use, information quality, and system quality. Additionally, Shaltoni et al (2015) used dimensions of information quality, system quality, and user ability to evaluate the perceived service quality of university's portals in developing countries. Most of the dimensions used in the literature are developed based on one-SERVQUAL dimensions. In this study, we used the latest version of e-SERVQUAL, e-core service quality scale (E-S-QUAL), as a result of the reduction of previously developed dimensions. E-S-QUAL consists of efficiency, fulfilment, system availability, and privacy. Efficiency is the ease and speed of accessing information on the sites. Fulfilment is the ability of the sites to provide the information required. System availability is the ability of the system to work according to its functions and privacy is the level of trust of the sites in maintaining consumer information confidentiality (Parasuraman, Zeithaml, and Malhotra, 2005). In this study, we employ a multiple-item scale, E-S-QUAL developed by Parasuraman, Zeithaml, and Malhotra (2005), which consisted of efficiency, system availability, fulfilment, and privacy.

Measuring e-trust, e-satisfaction and loyalty

Chen and Dhillon (2003), Palvia (2009), and Oliveira et al (2019) suggest three dimensions to measure e-trust that are free to be used on all types of transactions conducted through the internet, namely competence, integrity, and benevolence. Competence is the organization's ability to fulfil the promises offered; integrity is a condition where the organization acts consistently and honestly in providing all information on the sites. Benevolence is the ability of the organization to side with the consumer' interests. In terms of e-satisfaction, Udo, Bagchi, and Kirs (2010) have used the dimensions of the ability of online sites to provide satisfaction compared to the experience in previous online sites, the ability of online sites to provide services higher than consumer expectations, and pleasant experience provided. Nisar and Prabhakar (2017) used similar dimensions of the ability of online sites to provide higher services and experience than consumer expectations and enjoyment to measure e-satisfaction. In terms of HEI, Cheung and Lee (2011) and Shaltoni et al (2015) used the dimensions of the level of student satisfaction with information and systems to measure e-satisfaction of the e-learning portal.

Finally, in terms of loyalty, since universities' students do not make direct purchases as in e-commerce, e-loyalty dimensions become less significant. Therefore, in this study, we use the indicators suggested by Zeithaml, Berry, and Parasuraman (1996) and Ganesh, Arnold, and Reynolds (2000). It consists of favourable behavioural intentions consisting of positive word of mouth (WOM) and unfavourable behavioural intentions consist of switching behaviour and complaining behaviour. In this study, e-trust is measured using the dimensions of Chen and Dhillon (2003) which consisted of competence, integrity, and benevolence while e-satisfaction was measured by using the dimensions of Anderson and Srinivasan (2003), Udo, Bagchi, and Kirs (2010) and Nisar and Prabhakar (2017) which consisted of the ability of websites, social media and university's portals to provide satisfying experiences, the ability of the online sites to provide higher service and information quality than students' expectation, and pleasant experience offered. Loyalty was measured by using the dimensions of Zeithaml, Berry, and Parasuraman (1996) and Ganesh, Arnold, and Reynolds (2000). There are eleven hypotheses to be tested in this study, namely:

H1. Efficiency has a positive effect on e-satisfaction
H2. Efficiency has a positive effect on e-trust
H3. System availability has a positive effect on e-satisfaction
H4. System availability has a positive effect on e-trust
H5. Fulfilment has a positive effect on e-satisfaction
H6. Fulfilment has a positive effect on e-trust
H7. Privacy has a positive effect on e-satisfaction
H8. Privacy has a positive effect on e-trust
H9. E-trust has a positive effect on e-satisfaction
H10. E-trust has a positive effect on the loyalty
H11. E-satisfaction has a positive effect on the loyalty

The developed questionnaires consisted of five items for efficiency, two items for system availability, six items for the fulfilment, two items for privacy, four items for e-trust, three items for e-satisfaction, and three items for loyalty. The items were measured by a five Likert scale (1= strongly disagree; 5= strongly agree). The final set consisted of 60 variables, which were 32 exogenous and 28 endogenous variables. Reliability testing was performed to measure the internal consistency of the items through Construct Reliability (CR) and Average Variance Extracted (AVE) tests. The results in Table 1 indicated that all constructs have CR>0.70 cut-off values and AVE>0.50 cut-off values.

Items	Symbols	Std. loadings	CR	AVE
Efficiency			0.927	0.719
Web sites, portals and social media are easily accessible	X1	0.733		
Transactions can be completed quickly	X2	0.703		
Pages load quickly	X3	0.748		
Web sites, portals and social media are easy to use	X4	0.813		
I can sign in to the system quickly	X5	0.847		
Fulfilment			0.799	0.762
I can easily find what I was looking for on websites, portals and social media	X6	0.735		
All of the information is very well presented	X7	0.748		
The universities' online sites provide attractive design and layout	X8	0.720		
Information updates are carried out regularly	X9	0.822		
The information provided meets students' needs	X10	0.883		
The universities online sites help students a lot with their academic activities	X11	0.890		
System availability			0.823	0.700
The system can be accessed at anytime, anywhere from any device	X12	0.773		
The operating system never stops functioning without notice	X13	0.738		
Privacy			0.869	0.769
The universities online sites do not share my personal information with other parties	X14	0.759		
I consider the universities' online sites are very safe	X15	0.851		
E-satisfaction			0.939	0.840
I like to search for information through universities' web sites, portals, and social media	Y1	0.684		
Overall, I am satisfied with the experience of using universities' web sites, portals, and social media	Y2	0.935		
I am satisfied with the information and services provided through the universities' web sites, portals, and social media	Y3	0.953		
E-trust			0.960	0.827
I trust all information provided through the universities' web sites, portals and social media	Y4	0.810		
All information provided is relevant and accurate	Y5	0.863		
All information provided is consistent	Y6	0.876		
I believe that the universities provide all information through web sites, portals and social media in order to facilitate students with effective teaching and learning process	Y7	0.772		
Loyalty			0.854	0.671
Positive WOM	Y8	0.886		
No switching behaviour	Y9	0.773		
No complaining behaviour	Y10	0.528		

Table 1: Construct reliability results

RESULTS AND DISCUSSIONS

The evaluation of the goodness of fit statistics indicates that the overall model was not rejected (Chi-square statistics (χ^2))= 667.252, degree of freedom (*df*)= 258 (*p*-value = 0.000), Goodness of Fit Index (GFI)= 0.847, Adjusted Goodness of Fit Index (AGFI)= 0.807, Normed Fit Index (NFI)= 0.889, Comparative Fit Index (CFI)= 0.928, Tucker-Lewis index (TLI)= 0.916, Incremental Fit Index (IFI)= 0.929, Root Mean Square Error of Approximation (RMSEA)= 0.072, Root Mean Square Residual (RMR)= 0.039). The test on the hypotheses in Table 2 and Figure 1 indicates that seven of the eleven hypotheses are not rejected (H1, H5, H6, H8, H9, H10, H11). The effect of efficiency on e-satisfaction (H1) is significantly positive (β=0.031). This finding supports prior studies of Quan (2010), Sheng and Liu (2010), Mohammed et al (2016), and Tandon, Kiran, and Sah (2017) on online shopping sites. Similarly, the effect of fulfilment on e-satisfaction (H5) is significantly positive (β=0.589). This finding supports studies of Kim, Jin, and Swinney (2009), Quan (2010), Sheng and Liu (2010), Ariff et al (2013), and Ting et al (2016). Conversely, privacy and system availability do not significantly affect e-satisfaction.

Furthermore, e-trust is only affected by two E-S-QUAL dimensions of fulfilment and privacy which support H6 and H8. The effect of fulfilment and privacy on e-trust is significantly positive (Coeff.=0.466 and Coeff.=0.267, respectively). These findings support Kim, Jin, and Swinney (2009), Hansen and Jonsson (2013), and Chek and Ho (2016). Moreover, fulfilment has the most powerful effect on e-satisfaction and e-trust. This supports Kim, Jin, and Swinney (2009). The findings support

Parasuraman, Zeithaml, and Malhotra (2005) as well, which states that fulfilment is the most critical predictor of e-service quality (E-S-QUAL), especially on web-based sites. Since, Parasuraman, Zeithaml, and Malhotra (2005) obtained these findings in a study conducted on online shopping sites, it can be concluded from this study that the similar paths also apply to universities' sites that do not carry out the purchasing process such as online shopping sites. The findings also indicate that ease of access, attractive design and appearance, and the ability of information provided to fulfil student desires have higher effects than other dimensions.

Conversely, privacy has a weak effect on e-trust. This is contrary to the study of Cheung and Lee (2006) that privacy is an essential predictor of e-trust. According to Wolfinbarger and Gilly (2003), the more often consumers get access to the web sites, the more privacy becomes less critical. It is because consumers consider themselves more experienced and understand the risk mitigation that might ensue. However, this finding is based on the experience of consumers doing purchasing transactions on online shopping sites. In the case of university sites in this study, activities such as purchasing, checking out, and credit card payments or bank transfers did not occur. Web sites and portals are often integrated with all faculties and study programmes. Students access the online sites for course enrolment, course support such as scheduling, examination, remedial, and access to an electronic library. This caused privacy to be less important compared to its effect on online shopping sites.

Hypotheses	Paths	Coeff.	Findings
H1	Efficiency -> E-satisfaction	0.031***	Not rejected
H2	Efficiency -> E-trust	0.064	Rejected
H3	System availability -> E-satisfaction	-0.193	Rejected
H4	System availability -> E-trust	0.088	Rejected
H5	Fulfillment -> E-satisfaction	0.589***	Not rejected
H6	Fulfillment -> E-trust	0.466***	Not rejected
H7	Privacy -> E-satisfaction	0.061	Rejected
H8	Privacy -> E-trust	0.267***	Not rejected
H9	E-trust -> E-satisfaction	0.412***	Not rejected
H10	E-trust -> loyalty	0.553***	Not rejected
H11	E-satisfaction -> Loyalty	0.236***	Not rejected

***significant at alpha 1%, **significant at alpha 5%, *significant at alpha 10%

χ^2= 667.252, *df*= 258 (*p*-value= 0.000), GFI=0.847, AGFI=0.807, NFI=0.889, CFI=0.928, TLI=0.916, IFI=0.929, RMSEA=0.072, RMR=0.039.

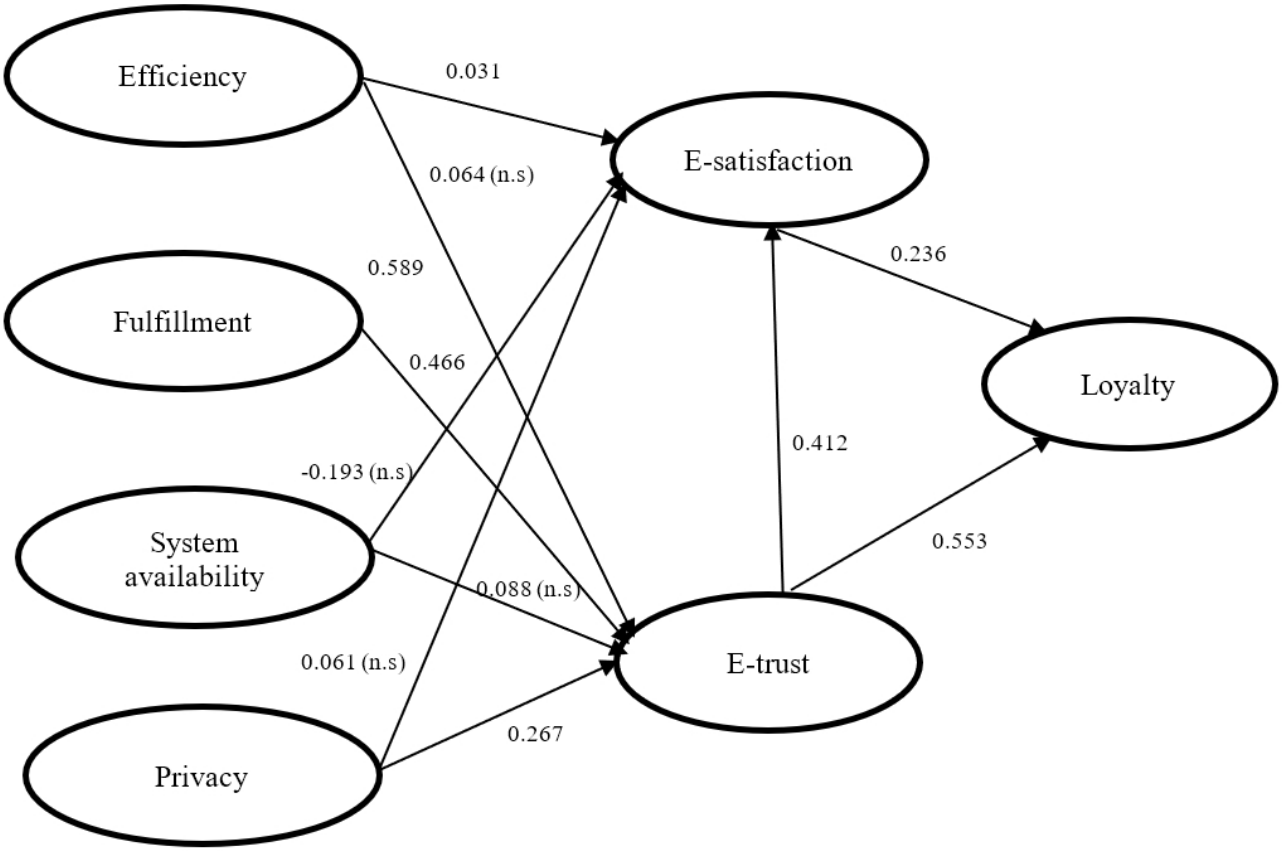
Table 2: Path coefficients

Furthermore, the effect of e-trust on e-satisfaction is supported by prior studies (H9). E-trust is significantly affected by e-satisfaction in a positive way (β=0.412). This finding is consistent with the studies of Jin and Park (2006) and Kim, Jin and Swinney (2009). Finally, e-trust and e-satisfaction significantly affect loyalty (H10 and H11). The effects of both variables on loyalty are significantly positive (β=0.553 and β=0.236, respectively). This finding offers support to the prior studies of Anderson and Srinivasan (2003), Pitta, Franzak, and Fowler (2006), and Kim, Jin, and Swinney (2009).

Grabner-Kräuter and Faullant (2008) acknowledged that technology is an object of trust. Trust is desired to build consumer loyalty. The smaller the consumer's perception of risk, the higher consumer loyalty. In the context of this study, e-trust is measured in the form of students' trust in all information provided, and all information is intended to facilitate students in their activities at the universities. E-trust has nothing to do with individual financial data that is shared through online sites as discussed in most of the similar studies on online shopping sites, e-banking or e-government. The quality of information shared by universities is a critical factor, not only for students but also for society. Kumar and Jumnal (2015) revealed that universities' web sites, portals and social media had replaced traditional management and promotion ways, especially with the emergence of internationalization of HEI. Florez-Parra, Perez, and Hernandez (2014) and Saraite-Sariene, Rodríguez, and de Rosario (2018) proclaimed that consistency, transparency, and information accountability had become crucial problems in HEI. Universities, especially state universities often have problems with disclosure information because the decision making is carried out internally. The potential disclosure information can occur in terms of strategies, financing, student and staff selections, remuneration, and university's ranking. Crawford (2012) asserted that information such as student registration statistics and facilities provided by universities must be reported transparently through web sites and by the actual situation. Student trust in all information shared will affect student loyalty to the university. Loyalty in this study is not limited to loyalty to the university's online sites (e-loyalty) but loyalty to the university as a whole. Loyalty is tested in the form of spreading positive information, reducing complaints and not seeking alternative education at other universities.

The importance of web sites, portals and social media have brought the online site as one of the university's competitive advantages (Lee, Choi, and Jo, 2009). Student loyalty to the university is strongly affected by their satisfaction with

online sites. The results of this study provide theoretical and managerial impacts. Theoretically, the results of this study contribute to the literature by analysing the relationship of e-service quality through the E-S-QUAL dimensions with e-satisfaction, e-trust and loyalty to the university. The empirical studies regarding the relationship between these variables at the university are still limited. Managerially, the strong effect of fulfilment on e-satisfaction suggests the decision-makers focus on aspects such as the ease of students looking for information they need, the quality and the way of information presented, design and layout, and updating information. The ability to fulfil those criteria will lead to e-satisfaction, e-trust and student loyalty to the university.



n.s.= non significant effects

Figure 1: Test results of the research model

CONCLUSIONS AND STUDY LIMITATIONS

In summary, from the four E-S-QUAL dimensions, efficiency and fulfilment are the only dimensions that affect e-satisfaction while fulfilment and privacy are the only dimensions that significantly affect e-trust. Fulfilment is the main predictor of e-service quality that affects e-satisfaction and e-trust. Moreover, the relationships between e-trust, e-satisfaction and loyalty are positively confirmed and offer support to the prior studies. The findings of this study are useful for decision-makers at the university regarding the importance of online sites to create loyalty. The findings suggest the importance of increasing capacity and improving facilities related to universities' web sites, portals, and social media. Some limitations should be noticed in this study. First, this study only collects data from undergraduate students. Further studies are recommended to employ graduate students and other users as well, such as staffs and lecturers. Graduate students usually require access to online publications and databases; thus, they may access universities' web sites and university portals more often than undergraduate students. The similarity goes for staffs and lecturers, most of whom have accessed web sites and portals to report their performance periodically. Their perceived e-service quality may be different from undergraduate students. The other limitation is we do not cover a specific indicator of ease of reading, ease of understanding content as well as the language provided by websites and portals. Besides, this study only examines the relationship of e-service quality, e-trust, and e-satisfaction on loyalty. Further studies should consider the comparison of effects with traditional service quality, trust, and satisfaction.

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STRUCTURAL RELATIONSHIPS AMONG TEACHERS' GOAL ORIENTATIONS FOR TEACHING, SELF-EFFICACY, BURNOUT, AND ATTITUDES TOWARDS TEACHING

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ABSTRACT

Teachers' goal orientations for teaching are one of the most important motivational beliefs affecting instructional processes. This study investigated the structural relationship between teachers' goal orientations for teaching and their attitudes towards their job through measures of self-efficacy and burnout. 495 teachers (working in primary, secondary, or high schools) participated in the study. Hypothetical models were created and tested using the variables mentioned above. The results suggest: 1) mastery goal orientation, through self-efficacy and burnout measures, is a positive predictor of attitudes towards teaching, 2) work-avoidance orientation, through self-efficacy and burnout measures, is a negative predictor of attitudes towards teaching and 3) ability-approach orientation has no effect on attitudes towards teaching. In addition, it has been found that the above goal orientations do not have a direct effect on teachers' attitudes towards teaching. The results are further discussed through comparisons to related literature.

KEYWORDS

Attitude, burnout, goal orientations for teaching, self-efficacy, structural equation modelling

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Highlights

- *Teachers' mastery goal orientation through self-efficacy and burnout measures is a positive predictor of attitudes towards teaching.*
- *Teachers' work-avoidance orientation through self-efficacy and burnout measures is a negative predictor of attitudes towards teaching.*
- *Teachers' ability-approach orientation has no effect on attitudes towards teaching.*
- *Above goal orientations do not have a direct effect on teachers' attitudes towards teaching.*

INTRODUCTION

The school is not only a place for learners to learn and to do something (Butler, 2007), but also for teachers to perform, teach and learn simultaneously, struggle with difficulties, try to increase efficiency, carry out the responsibilities of their profession and practice professionalism in their job,and acquire necessary knowledge, skills and tendencies. In other words, while the learning environments such as schools are motivational environments for students to learn, they also become motivational environments for teachers to teach (Yıldızlı, Saban and Baştuğ, 2016) and, thus, teacher motivation and its components are significant. Research on motivational beliefs that are effective in the learning process indicates the importance of students' goal orientations (Leondari and Giamalas, 2002). The goal orientation that is important for learning is also important for teachers and recent studies have focused on this matter (e.g. Butler, 2007, Butler, 2012; Butler and Shibaz, 2008; Dresel et al, 2013; Han, Yin and Wang, 2016). In line with this, the aim of the present study is to reveal teachers' goal orientations for teaching. As a secondary aim,

the relationship between teachers' goal orientations and their attitudes towards teaching (including their self-efficacy and burnout) has been investigated.

Goal orientations for teaching

Goals provide a framework in which an individual interprets events and outcomes in a cognitive, behavioural and emotional pattern and responds to those events and their consequences (Dweck and Leggett, 1988). Issues such as why individuals determine their goals, how they decide to reach those goals and their standards to assess their performance are related to goal orientation (Yıldızlı, Saban and Baştuğ, 2016). Goal orientation theory examines how and why individuals make attempts to achieve various goals (Anderman and Maehr, 1994). A number of categorizations for goal orientations exist in the literature; (1) learning goal and performance goal (Dweck, 1986), (2) task-involvement and ego-involvement (Nicholls, 1984) and (3) mastery goal and performance goal (Ames, 1992). These orientations were later re-modelled into different subcategories. For example: (1) *learning-approach, performance-approach and performance-avoidance* (Elliot and Harackiewicz, 1996) and (2) 2x2 goal orientation (learning / performance x approach / avoidance (Elliot and McGregor, 2001)). The *performance-approach* states that students' aim for developing themselves is to be admired by others while *performance-avoidance* states that students try to prevent their mistakes and/or failures being realized by others. Performance avoidance is associated with low self-efficacy, anxiety, avoidance without help, self-avoidance strategies (Urdan et al, 2002). *Learning-approach* states that learners are oriented to achieve their learning goals while *learning-avoidance* states that learners display avoidance behaviours to inhibit understanding of tasks or misunderstandings. On the other hand, in *learning-avoidance* orientation, individuals have more negative feelings such as fear and anxiety during the process of realizing goals (Elliot and McGregor, 2001).

While students are oriented towards acquiring knowledge and skills during learning, teachers aim to equip students with knowledge and skills. Since there is behavioural diversity among teachers in reaching those aims, there can be diversity in their orientations. Therefore, goal orientations are considered to be important in teachers' actions to organize and initiate skills development activities (Nitsche et al, 2011). For example, when the learning approach orientation is taken into consideration from the perspective of a teacher; it can be seen that this orientation is associated with high professional reflection, high interest in teaching, high self-efficacy and preference for seeking help to solve problems related to the profession (Butler, 2007; Runhaar, Sanders and Yang, 2010). As for performance-avoidance orientation, a teacher with such orientation undertakes an activity with the aim to avoid low proficiency and show skill development. This orientation may be related to low efficiency, anxiety and avoidance of help-seeking and lack of adequate effort when completing tasks (Montecinos et al, 2014). A number of different classifications have been proposed in the literature in order to categorize teachers' goal orientations for teaching.

Butler (2007) classified goal orientations for teaching into four categories. These are: (1) *mastery* (trying to learn and develop professional skills), (2) *ability-approach* (trying to display superior professional skills), (3) *ability-avoidance* (trying to avoid displaying low-level skills), (4) *work-avoidance* (trying to make as little effort as possible). In their teaching practices, teachers who have *mastery goal orientation* keep student participation high, enable students to interact, acknowledge students' efforts (Patrick et al, 2001) and provide rich learning opportunities that allow students to observe their own development (Throndsen and Turmo, 2012). Teachers focus on detailing and developing the strategies that they select to be able to carry out their teaching responsibilities in the best way possible. A teacher's effectiveness in his/her ability to select strategies appropriate for a teaching context also impacts on his/her confidence. The more effective a teacher becomes in selecting appropriate teaching strategies, the more difficult goals s/he set himself/herself to achieve (Steele-Johnson et al, 2000). Teachers who have ability approach orientation, on the other hand, are focused on showing their superior teaching skills and receiving compliments from people in their immediate environment such as school management, students, colleagues and families (Cho and Shim, 2013). Teachers who have the ability approach or performance orientation focus on skills differences among students, make comparisons among students in the classroom and use teaching methods that promote competition (Anderman et al, 2001). Such an approach results in classroom atmospheres where high-achieving students are prioritized, teaching processes are arranged to suit their needs and requests, the needs and interests of other students are disregarded and teachers do not really make an effort to teach. In addition, in classrooms where teachers with such orientations teach, the grades that students receive from exams are perceived to be important and significant (Anderman et al, 2001).

Teachers and self-efficacy

Self-efficacy refers to 'people's judgments of their capabilities to organize and execute courses of action required to attain designated types of performances' (Bandura, 1997: 391). Individuals with positive self-efficacy are capable of determining what they learn, how much effort they should make for future learning and when they are right or wrong. On the other hand, people with low self-efficacies avoid difficult tasks and have lower endurance when faced with difficulties (Elliott and Dweck, 1988). Individuals' participation in realizing the goals they set in relation to a task, the amount of effort that they make and the types of goals they set for themselves are significant in their success (Hagen and Weinstein, 1995). Considering that individuals with different goal orientations also have different levels of endurance, it can be said that their beliefs in coping with these difficulties also affect their determination. Therefore, their goal orientations are parallel to their self-efficacy perceptions. From a teaching perspective, teachers' goal orientations for teaching are closely associated with their self-efficacy beliefs.

Teacher self-efficacy is described as teachers' beliefs about their ability to affect students' achievement of the desired learning outcomes (Wheatley, 2005), their beliefs about their

capacity to affect student performance (Ashton, 1984) and beliefs in the efficiency of their own teaching (Tai et al, 2012). The following are among the most important characteristics of teachers with high self-efficacy; they think that working with students is important and valuable, they have positive expectations regarding students' achievement and behaviour, they know they are also responsible for student failures and exhibit behaviours that aim to help students, they are organized in setting goals for student learning and choosing appropriate teaching strategies (Ashton, 1984), they have high beliefs that students will learn and are aware that this belief is likely to positively affect students and they create democratic decision-making mechanisms together with students. Teachers with low self-efficacy, on the other hand, prefer to avoid trying harder to help students achieve learning goals, their encouragement to teach is not enough, they consider factors apart from themselves to be responsible for student failures, they do not do sufficient self-reflection on their teaching practices, they exhibit negative emotions while working with students and they are weak in the selection of different methods, techniques, or materials. To summarize, as a result of avoiding carrying out the responsibilities that are required by their profession, such teachers decrease the effectiveness and quality of teaching/learning processes. This situation renders the study of the variables -which can affect self-efficacy- as an important research topic.

Attitudes towards teaching

Attitudes are inner states or beliefs that affect what individuals want to do. This inner state refers to positive/negative or intentional/unintentional reactions to a person, a group of people, an object, a group of objects, a situation, or the environment in general (McMillan, 2013). In other words, attitude indicates an individual's emotional tendency in favour of or against a condition, event, object, place, or idea (Papanastasiou, 2002). Attitude -which stands out with its cognitive, behavioural and affective dimensions- is an orientation that affects people's behaviours. Considering this, it can be argued that teachers' attitudes towards their job are an important factor for doing their job. This is because teachers' attitudes towards teaching -being reflected in teachers' behaviours and classroom atmosphere- play a significant role in the character development of their students, the nature of teacher-student relationships and the provision of learning (Semerci and Semerci, 2004). Therefore, teacher attitudes provide important implications to understand classroom environments (Rimm-Kaufman and Sawyer, 2004). It is expected that teachers with positive attitudes towards their jobs will be teachers who willingly fulfil all of their responsibilities, who do research and who are open to innovation. The present study aimed to investigate whether teachers' goal orientations directly or indirectly affect their attitudes towards the teaching profession. Because it is assumed that teachers' goal orientations will be reflected on their teaching and these reflections will have significant effects on their attitudes towards teaching. In other words, considering that the behavioural dimension of the attitude can help identify the direction of an individual's attitude (Semerci and Semerci, 2004), it can be understood that this behavioural dimension is likely to be influenced by teachers' goal orientations and this motivational dimension, together with other motivational factors in the context, will affect teachers' attitudes towards teaching.

Teachers and burnout

Burnout is a syndrome in which individuals become emotionally exhausted and they become depersonalized and less successful (Gerrig and Zimbardo, 2005). This phenomenon is observed among employees working in jobs that require them to build close relationships with people. Burnout is also defined as a reduction in personal accomplishment among people who work with other people (Maslach, 1993). Based on this, depersonalization, personal accomplishment and emotional exhaustion can be considered to be sub-dimensions of burnout. Burnout is also described as a syndrome that has both physical and mental dimensions which contains long-lasting physical feelings of fatigue and helplessness and despair as well as negative attitudes towards an individual's job, life and other people (Maslach and Jackson, 1981). Burnout, which is also experienced by teachers, is a condition that does not only affect teachers' motivation, job satisfaction and health condition but also student behaviours and learning (Lamude, Scudder and Furno-Lamude, 1992; Pietarinen et al, 2013). Therefore, it is important to investigate the burnout levels of teachers and the impact ratings of other variables associated with burnout. Personal and environmental factors can affect teachers' burnout levels. For example, stressful work environments, crowded classes, school environments, managerial roles, individual differences, motivation and so on can trigger burnout.

The responsibilities that teachers have in and out of school (i.e. responsibilities to the principal and students and teaching activities) result in situations that cause intensive stress at work (Cemaloğlu and Şahin, 2007). Research studies found that there was an important relationship between teachers' burnout and increase in the number of activities that they undertake in relation to performance goal orientation (Retelsdorf et al, 2010), that goal orientations were related to coping strategies that teachers used for overcoming difficulties and that those experiences were an important predictor of burnout (Parker et al, 2012). Additionally, burnout has been found to have a positive correlation with teachers' avoidance behaviours and a negative relationship with approach orientations (Naidoo et al, 2012). In summary, it is considered that a teacher who experiences burnout can avoid setting challenging goals which can decrease their professional performance and creating supportive learning environments in classrooms. Similar avoidance behaviours can cause teachers not to self-reflect on their effectiveness to teach which then might increase their burnout levels. The increased burnout levels might then dramatically decrease their quality of life and lead to deterioration in teaching efficiency (Carson, et al, 2011; Shen et al, 2015).

The aim and significance of this study

The value of learning both at the individual and societal level increases the importance of the responsibility that teachers have. In line with this, it is also important to investigate the knowledge, skills and attitudes that teachers have and find out

how such variables impact on teaching/learning processes. Research has revealed that the variables examined in the present study correlate with teachers' behaviours. Teachers' behaviours and attitudes play an important role in determining whether they are effective teachers. Therefore, the present study aimed to explore the structural relationship among teachers' goal orientations for teaching, their self-efficacy and burnout levels and their attitudes towards teaching. The motivation for undertaking this study, the research problem and hypotheses are explained below.

Attitude is one of the variables studied in the present research. It is also considered as a variable that can be affected by other variables and the reason for why attitude is considered as a variable that is affected by other variable is explained as follows. Attitude is a determiner that affects individuals' actions. Traditionally, the definition of attitude included the tendencies and beliefs that individuals possess prior to action. Even though this definition explains the concept of attitude to a certain extent, it fails to capture the process of its occurrence. This is because even though our attitudes are considered to be determiners of our behaviours, we still need experiences so that we can form our attitudes. In other words, attitude is not only a tendency that affects behaviour but also is a phenomenon that is affected by our actions and can change its direction in time. Therefore, motivational factors can not only affect the behaviour that is yet to occur but also can transform into new patterns during the stage of behaviour. To provide an example, it would not be realistic to expect a child who does not attend a school to develop an attitude towards the school. This is because the child does not have any negative or positive experience about the school. Therefore, the experiences and the perceptions that individuals develop over time are key to forming attitudes.

Similarly, feelings and perceptions with regards to teaching can develop during a teacher's teaching career. Therefore, other variables that affect such feelings and perceptions are considered to be important and the extent to which those other variables affect attitude is studied in the present research.

In line with this aim, an answer to the following research problem has been sought and the following hypotheses were tested:

Main problem: How do teachers' goal orientations for teaching (ability approach, mastery and work avoidance) predict their teacher self-efficacy, burnout and attitudes towards teaching?

Hypothesis1 (H1): *Teacher self-efficacy is a mediator in predicting the effects of teachers' goal orientations (ability approach, mastery and work avoidance) on their attitudes towards teaching.*

Butler (2007) explained that goal orientation hypotheses for teachers, because of their nature, would be similar to the ones that have been proposed for student behaviours and outcomes. In goal orientations theory, considering that a situation or action's aim and meaning are related to determining motivation (Ford, 1992; Fyans et al, 1983), these orientations will result in individuals' actions towards the accomplishment of their aims. In other words, goal orientations have the capacity to affect an individual's actions and other motivational dimensions. Goal orientations for teaching are also related to attitudes towards the teaching profession. However, having high goal orientations does not guarantee a high level of positive attitudes for the teaching profession. Other variables should be taken into account in this equation. This is because not only the meanings we put on our actions but also our beliefs on whether our teaching practices are sufficient or not are considered to affect attitudes. In other words, our orientations prior to starting a teaching-related activity and our perceptions whether we have the capacity to provide sufficient teaching activities or not to enable learning affect our performance and this, in general, results in positive or negative attitudes. The most important argument in relation to this is that attitudes are not considered to be independent of an individual's actions. Therefore, in this study, it is hypothesized that goal orientations affect attitudes toward the teaching profession through measures of self-efficacy.

Hypothesis2 (H2): *Burnout level is a mediator in predicting the effects of teachers' goal orientations (ability approach, mastery and work avoidance) on their attitudes towards teaching.*

Burnout is a syndrome that manifests itself gradually as a result of an individual's experiences (Peeters and Rutte, 2005). As a result of this syndrome, individuals feel emotionally exhausted and adopt a manner in which they distance themselves from and are harsh to learners, parents and colleagues. Teachers who are burning out generally feel insufficient and consider themselves to be no longer doing an important or meaningful job (Maslach, Schaufeli and Leiter, 2001; Schaufeli and Buunk, 2003). There are studies in the literature which have found that the goal orientations are determiners of burnout (Retelsdorf et al, 2010). The research hypothesis was developed in line with those ideas. For example, it is considered that teachers with work avoidance goal orientation are considered to be under a greater risk of burnout. This suggests that teachers' burnout levels can be negatively affected when they experience a negative situation in the teaching process or other actions whilst trying to increase their professional knowledge and skills. Therefore, goal orientations and the different dimensions of burnout that comes with them will shape teachers' ideas, feelings and actions which will also allow the development of general feelings and ideas towards the profession. For these reasons, it is hypothesized that goal orientations affect attitudes toward the teaching profession through measures of burnout.

Hypothesis3 (H3): *Both teacher self-efficacy and burnout levels are mediators in predicting the effects of teachers' goal orientations (ability approach, mastery and work avoidance) attitude towards teaching.*

In this part of the study, the effect that the goal orientations created through self-efficacy and burnout was tested. Burnout is not independent of self-efficacy. There is a systematic relationship between burnout and self-efficacy. The literature suggests that low teacher self-efficacy would result in burnout feelings among teachers (Evers, Brouwers and Tomic, 2002). Similarly, Bandura (1997) explained; those teachers with low self-efficacy levels considered their environment to be full of dangers, they were focused on their inefficiency to solve those problems and they overestimated potential dangers. Therefore, this pattern of cognitive and emotional responses is expected to

increase emotional exhaustion and depersonalization (Skaalvik and Skaalvik, 2007). A teacher who has started to perceive themselves as inefficient is considered to have faster burnout. This study aimed to test how teachers' self-efficacy perceptions affected their burnout levels based on their goal orientations and how this affected their attitudes towards teaching.

MATERIALS AND METHODS

Research design

The study investigated the structural relationship among specific variables (goal orientations, self-efficacy, burnout and attitudes) through the data collected from teachers working in public schools in Turkey. These variables have been evaluated theoretically and hypothetical structural equation models were created which were then tested.

Participants

495 teachers, who worked in the Central Anatolia region of Turkey, participated in the study. In this research, the data collection process took place between 2017 and 2018. Those teachers worked at different school levels (i.e. primary, secondary, or high school) and taught different subjects (i.e. mathematics, Turkish, science and so on). The teacher population who participated in the study included 315 female and 183 male participants (one participant did not specify his/her gender). Additionally, those teachers worked in schools located in the countryside as well as counties and city centres. Their teaching experience ranged between 1-5 years and 16-20 years.

Data collection tools

The following instruments have been used in this study; "*Goal Orientations for Teaching Scale"*, *"Teacher Self-Efficacy Scale"*, *"Burnout Scale"* and "*Attitudes towards Teaching Scale.*

Goal Orientations for Teaching Scale

Goal Orientations for Teaching, developed by Butler (2007), initially comprised of four dimensions. Relationship with students was later on added to the scale as the fifth dimension by Butler (2012). Butler and Shibaz (2014) included an additional item into the mastery dimension. The scale is a five-point Likert scale. Butler and Shibaz (2014) conducted Exploratory and Confirmatory Factor Analysis (EFA and CFA) results of which yielded 21 items and five factors; 1) Ability-approach, 2) Mastery, 3) Ability-avoidance, 4) Work-avoidance and 5) Relationship with Students. The Turkish adaptation of the scale was carried out by Yıldızlı, Saban and Baştuğ (2016). The final version of the Turkish adaptation of the scale consisted of 15 items and four factors. The scale used in the present study focused on *Mastery, Ability-approach* and *Work-avoidance* dimensions and a CFA was re-conducted. The dimensions of relations with students were not included in the research. The CFA results suggested that the factor loadings of items within the scale ranged between.241 and.744. Model fit indices were calculated as: χ^2/sd=1,908, RMSEA=.043, IFI=.971, TLI=.955, CFI=.970. The analysis of Cronbach's Alpha levels of these dimensions and the total variance they explained were;.713 for *ability-approach goal orientation* (explaining 58.442% of total variance),.447 for *Mastery-goal orientation* (explaining 46.958% of total variance) and.714 for *Work-avoidance Goal Orientation* (explaining 54.160% of total variance).

Teacher Self-efficacy Scale

The original version of the *"Teacher Self-Efficacy Scale"* utilized in this study was developed by Tschannen-Moran and Woolfolk Hoy (2001). Validity and reliability analyses for the Turkish adaptation of that scale were carried out by Çapa, Çakıroğlu and Sarıkaya (2005). The original scale was a five-point Likert scale. The scale consisted of 24 items and three factors (efficacy for student engagement, efficacy for classroom management and efficacy for instructional strategies). Confirmatory Factor Analysis (CFA) analysis was re-conducted for this scale in the present study and it was found that factor loadings for items within the *"student engagement"* dimension ranged between.515 and.749 and between.580 and.713 for items within *"teaching strategies"* dimension. Model fit indices were; χ^2/df=3.004, RMSEA=.064, IFI=.955, TLI=.943, CFI=.955. The fact that χ^2 value was between two and five ($2<\chi^2/df\leq5$) suggested that an acceptable level of fit was achieved. The Cronbach's Alpha coefficient levels of these dimensions and the amount of variance they explained were as following;.881 for *student engagement* dimension (explaining 55.563% of total variance) and.872 for *teaching strategies* (explaining 52.967% of total variance). Overall Cronbach's Alpha level for the scale was.927 and it explained 62.018% of total variance.

Burnout Scale

Maslach Burnout Inventory- Educators Survey (MBI-ES) which was adapted by Maslach, Jackson and Scwab (1996) into educational contexts from the original *MBI* developed by Maslach and Jackson (1981) was utilized in order to measure participants' burnout levels. MBI-ES has been adapted into the Turkish context by İnce and Şahin (2015). The original MBI-ES scale consisted of 22 items and 3 factors (emotional exhaustion, depersonalization and personal accomplishment). The validity and reliability analyses conducted by İnce and Şahin (2015) showed that Cronbach's Alpha levels for the dimensions were;.88 for *Emotional Exhaustion*,.78 for *Depersonalization* and.74 for *Personal Accomplishment*. CFA was re-conducted in the present study and results suggested that factor loadings for items within the *Emotional Exhaustion* dimension ranged between.436 and.832, between.381 and.650 for items within *Personal Accomplishment* dimension and between.249 and.662 for items within *Depersonalization* dimension. The items of the *Personal Accomplishment* dimension were reversed when the hypothesis models were tested. Model fit indices were calculated as; χ^2/df=2.274, RMSEA=.051, IFI=.938, TLI=.918, CFI=.37. Cronbach's Alpha levels and total variance explained were as following;.846 for *Emotional Exhaustion* (explaining 58.601% of total variance),.765 for *Personal Accomplishment* explaining 38.206% of total variance) and.734 for *Depersonalization* (explaining 48.988% of total variance). Overall Cronbach's Alpha level for the whole scale was.864 and it explained 56.475% of total variance.

Attitudes towards Teaching Scale

Üstüner's (2006) "Attitudes towards Teaching Scale", which consists of 34 items, was used in order to measure teachers' attitudes towards their job. Receiving high scores from the scale indicates an individuals' positive attitude towards teaching while low scores indicate negative attitudes towards teaching. The scale consists of one factor. Factor loadings of items within the scale ranged between.41 and.71 and item total correlations were between.43 and.75. Test/re-test reliability coefficient was used to calculate reliability. Cronbach's Alpha internal reliability was calculated as.93. The original scale was a five-point Likert scale. The scale consisted of both positive and negative statements. The following are examples of negative statements: "*In my opinion, the teaching profession is boring*", "*I think the teaching profession does not match my lifestyle*" and "*I regret having chosen teaching as a profession*". The following are examples of positive statements: *"I feel proud to be able to touch on people's lives through my teaching*", "*The continuity of the teaching profession reassures me*". A number of items (20, 22, 24, 27, 29 and 33) in this scale were removed since they were directed to pre-service teachers. To provide examples; "*I think there are many things that I can achieve when I become a teacher*", "*Thinking that I will become a teacher frightens me*". Confirmatory Factor Analysis (CFA) was re-conducted in this study. Factor loadings of items ranged between.354 and.752. Model fit indices were calculated as; χ^2/df=2.336, RMSEA=.052, IFI=.915, TLI=.899, CFI=.914. Overall Cronbach's Alpha level of the scale was.937 and it explained 63.408% of total variance.

Data analysis

Initially, Confirmatory Factor Analysis (CFA) was carried out for questionnaire items that were used in scales. Several fit indices such as χ^2/sd, root mean square error of approximation (RMSEA), non-normed fit index (NNFI/TLI), incremental fit index (IFI) and comparative fit index (CFI) for evaluating the CFA results. The criteria for the evaluation of CFA results are presented in Table 1. In addition, in few cases, there were missing data in few participants' responses. That deleting data of participants with missing data can cause bias (Osborne, 2013) was taken into consideration in situations where the missing data was associated to other variables. In such cases, missing data was replaced with the mean.

Fit indices	Good fit	Acceptable fit
[1]χ^2/df	$0 \le \chi^2/df \le 2$	$2 < \chi^2/df \le 3$
[3]RMSEA	0 ≤ RMSEA ≤.05	.05 < RMSEA ≤.08
[2]IFI	.95 ≤ IFI ≤1	.90 ≤ IFI ≤.95
[2]CFI	.95 ≤ CFI ≤1	.90 ≤ CFI ≤.95
[2]TLI	.95 ≤ TLI < 1	.90 ≤ TLI <.95

[1](Kline, 2011), [2](Baumgartner and Homburg, 1996; Bentler and Bonett, 1980; Marsh et al, 2006), [3](Browne and Cudeck, 1993)

Table 1: Fit indices and acceptance levels

In the second stage, the models generated based on hypotheses were tested. Teacher self-efficacy was analysed through teaching strategies and student engagement sub-dimensions. In addition, these analyses were imputed with CFA analyses. Furthermore, burnout was analysed through emotional exhaustion, depersonalization and personal accomplishment sub-dimensions. Like, self-efficacy analyses, analyses of burnout were imputed with CFA analyses. In other words, the sub-dimensions became the observed variables of the latent variables (self-efficacy and burnout). The models in this study were based on latent variables. The criteria set in Table 1 were also used in testing the proposed models. CFA and analyses that relate to theoretical models were conducted using SPSS 21 and AMOS 21 software.

RESULTS

Descriptive statistics

Initially, descriptive statistics relating to the variables investigated in the study are presented (see Table 2). Following descriptive statistics, the structural models developed based on the hypotheses were tested and the results of the analyses are included below.

It can be seen in Table 2 that participating teachers' mean score for mastery-goal orientation ($\bar{x}$ =4.28) was higher than their mean scores for ability-approach ($\bar{x}$ =3.36) and work-avoidance ($\bar{x}$ =3.48) goal orientations. In addition, the mean scores for teachers' self-efficacy and burnout levels were found to be $\bar{x}$ =3.69 and $\bar{x}$ =2.19 respectively. On the other hand, the mean score for the attitudes towards teaching dimension was high ($\bar{x}$ =3.99). Correlation analyses indicated that the positive relationship between ability-approach and mastery(r=.293) goal orientations and between ability-approach goal orientation and attitudes towards teaching (r=.200) were significant (p<.005). On the other hand, no significant relationship was found between ability-approach goal orientation and the remaining variables (self-efficacy, burnout). Details in Table 2 also show that mastery-goal orientation was significantly and positively correlated to self-efficacy (r=.234; p<.005) and attitudes towards teaching (r=.308; p<.005). Similarly, there was a significant but negative correlation between mastery-goal orientation and burnout (r=-.246; p<.005). The relationship between mastery-goal orientation and work-avoidance goal orientation, on the other hand, was positive but was close to zero and not significant (r=.015; p>.005). In addition, self-efficacy and attitudes towards teaching were significantly and positively correlated (r=.359; p<.005). Although the correlation between self-efficacy and work-avoidance goal orientation

was significant, the direction of this relationship was negative (r=-.284; p<.005). Last but not least, there was a significant and negative relationship between burnout and attitudes towards teaching (r=-.658; p<.005).

	N	Mean	*df*	Mastery	Ability-approach	Work-avoidance	Self-efficacy	Burnout	Attitude
Mastery	495	4.28	3.28	1					
Ability-approach	495	3.36	3.69	.293**	1				
Work-avoidance	495	3.48	3.51	-.015	-.366**	1			
Self-efficacy	495	3.69	9.23	.234**	.021	.145**	1		
Burnout	495	2.19	11.49	-.246**	-.061	-.282**	-.284**	1	
Attitude	495	3.99	17.31	.308**	.200**	.137**	.359**	-.658**	1

** p<.01

Table 2: Latent bivariate correlations and descriptive statistics

Research Hypotheses and Structural Equation Models

H1*: Teachers' goal orientations for teaching (ability approach, mastery and work avoidance) predict their attitudes towards teaching through self-efficacy.*

This model tested whether teachers' mastery, ability-approach and work-avoidance goal orientations can predict their attitudes towards teaching through the measure of self-efficacy. Considering the criteria set in Table 1, the analysis of the significance of the paths in the model (CMIN=1271.745, df=656, χ^2/df=1.939, RMSEA=.044, IFI=.940; TLI=.927; CFI=.939) suggested that the paths between mastery-goal orientation and self-efficacy (β=.63), between work-avoidance goal orientation and self-efficacy (β= -.38) and between self-efficacy and attitude towards teaching (β=.72) were significant. However, the path between ability-approach goal orientation and self-efficacy was not significant (β=.15) (see Figure 1.). According to these results; mastery goal orientation -through self-efficacy- is a positive predictor of attitudes towards teaching, work-avoidance goal orientation -through self-efficacy- is a negative predictor of attitudes towards teaching, but ability-approach goal orientation -through self-efficacy- does not predict attitudes towards teaching. In other words, as teachers' mastery-goal orientations increase so does their self-efficacy for teaching and this positively affects their attitudes towards teaching. On the other hand, as teachers' work-avoidance goal orientations increase, their self-efficacy for teaching decreases and this negatively affects their attitudes towards teaching.

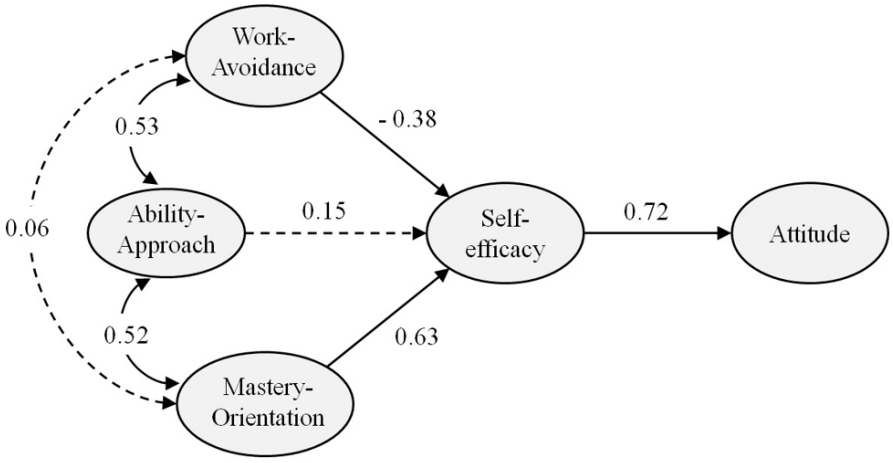

Figure 1: Structural equation model showing the association of teachers' goal orientations with their attitudes and self-efficacy in H1; all variables are latent; for the sake of clarity errors and indicators are not presented. Significant relationships are represented with a straight line while the insignificant ones are represented with dashed lines.

Variables		Estimate	S.E.	C.R.	*p*
Self-efficacy	Ability-approach	.049	.038	1.278	.201
Self-efficacy	Work-avoidance	-.131	.037	-3.535	***
Self-efficacy	Mastery orientation	.345	.067	5.159	***
Attitude	Self-efficacy	2.247	.327	6.865	***
Ability-approach	Work-avoidance	.299	.046	6.507	***
Mastery orientation	Work-avoidance	.020	.023	.872	.383
Mastery orientation	Ability-approach	.187	.029	6.385	***

*** $p<.05$

Table 3: Standardized regression weights and significance levels

H2: *Teachers goal orientations towards teaching (skills approach, mastery and work avoidance) predict their attitudes towards teaching through burnout measures*.

In this model, we tested whether teachers' mastery, ability-approach and work-avoidance goal orientations can predict their attitudes through the measure of burnout levels. Considering the criteria set in Table 1, the analysis of the significance of the paths in the model (CMIN=1506.501, *df*=695, χ^2/df=2.168, RMSEA=.049, IFI=.923, TLI=.908, CFI=.922) suggested that the paths between mastery-goal orientation and burnout levels (β= -.49), between work-avoidance goal orientation and burnout (β=.452) and between burnout and attitude towards teaching (β= -.79) were significant. However, the path between ability-approach goal orientation and burnout was not significant (β=-.163) (see Figure 2.). These results suggest that; mastery-goal orientation and work-avoidance goal orientation affects attitudes towards teaching through burnout measures. Ability-approach goal orientation, on the other, does not predict attitudes towards teaching through burnout measures. To put it differently, as teachers' mastery goal orientations increase, their burnout levels decrease and this positively affects teachers' attitudes towards teaching. On the contrary, as teachers' work-avoidance goal orientations increase so does their burnout levels which negatively affects teachers' attitudes towards teaching.

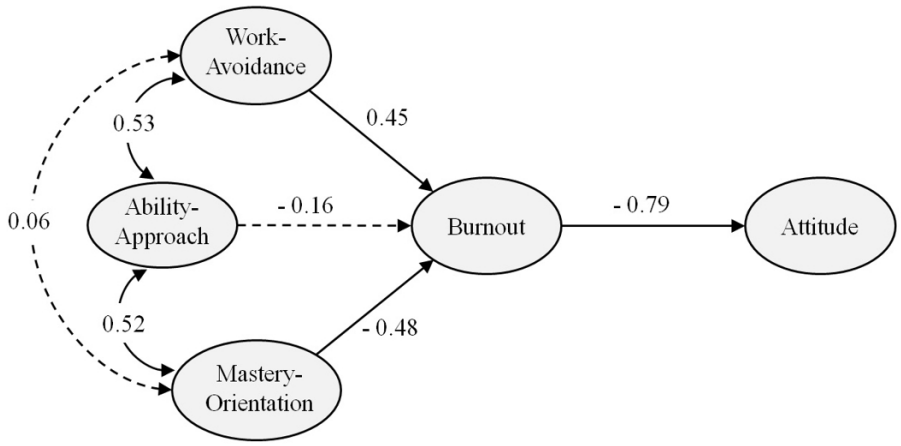

Figure 2: Structural equation model showing the association of teachers' goal orientations with their attitudes and burnout in H2; all variables are latent; for the sake of clarity errors and indicators are not presented. Significant relationships are represented with a straight line while the insignificant ones are represented with dashed lines.

Variables		Estimate	S.E.	C.R.	*p*
Burnout	Ability-approach	-.046	.028	-1.656	.118
Burnout	Work-avoidance	.136	.028	4.807	***
Burnout	Mastery orientation	-.232	.044	-5.255	***
Attitude	Burnout	-3.010	.270	-11.148	***
Ability approach	Work-avoidance	.285	.044	6.430	***
Mastery orientation	Work-avoidance	.020	.021	.942	.346
Mastery orientation	Ability-approach	.176	.028	6.244	***

*** $p<.05$

Table 4: Standardized regression weights and significance levels

H3*: Teachers' goal orientations for teaching (ability approach, mastery and work avoidance) predict and directly affects attitude towards teaching through self-efficacy and burnout measures*.

In this model we tested whether teachers' mastery, ability-approach and work-avoidance goal orientations can predict teachers' attitudes towards teaching through self-efficacy and burnout measures. Considering the criteria set in Table 1, the analysis of the significance of the paths are presented in the model (χ^2=1653.050, *df*=771, χ^2/df=2.144, RMSEA=.048, IFI=.927, TLI=.913, CFI=.926). These results suggested paths between mastery-goal orientation and self-efficacy (β=.324), self-efficacy and burnout (β= -.761) and burnout and attitudes towards teaching (β= -.852) were significant. Furthermore, the analysis of work-avoidance goal orientation path with self-efficacy was also significant (β= -.175) (see Figure 3). However, ability-approach goal orientation's path with self-efficacy was not significant (*p*=.594). Similarly, mastery (*p*=.842), work-avoidance (*p*=.145) and ability-approach goal orientations' (*p*=.104) paths with attitudes towards teaching were not significant. These results indicate that as teachers' mastery goal orientations increase so does their self-efficacy which decreases burnout levels and positively affects teachers' attitudes towards teaching. In addition, as teachers' work-avoidance goal orientations increase, their self-efficacy decreases which results in an increase in burnout levels and negatively affects attitudes towards teaching. It is worth to note that ability-approach was not found to significantly affect attitudes towards teaching through self-efficacy or burnout measures. Last but not least, it has also been found that teachers' goal orientations have a direct effect on their attitudes towards teaching.

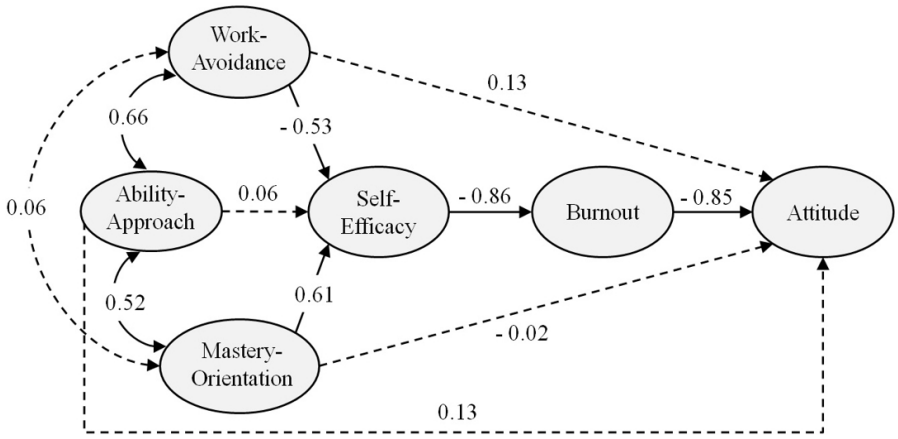

Figure 3: Structural equation model showing the association of teachers' goal orientations with their attitudes, self-efficacy and burnout in H3; all variables are latent; for the sake of clarity errors and indicators are not presented. Significant relationships are represented with a straight line while the insignificant ones are represented with dashed lines.

Variables		Estimate	S.E.	C.R.	*p*
Self-efficacy	Ability-approach	.019	.036	.553	.594
Self-efficacy	Work-avoidance	-.175	.039	-4.460	***
Self-efficacy	Mastery orientation	.324	.065	4.996	***
Burnout	Self-efficacy	-.761	.110	-6.945	***
Attitude	Ability-approach	.137	.084	1.625	.104
Attitude	Work-avoidance	.140	.096	1.456	.145
Attitude	Mastery orientation	-.032	.161	-.199	.842
Attitude	Burnout	-3.202	.430	-7.454	***
Ability approach	Work-avoidance	.295	.045	6.530	***
Mastery orientation	Work-avoidance	.019	.023	.857	.392
Mastery orientation	Ability-approach	.183	.029	6.343	***

*** *p*<.05

Table 5: Standardized regression weights and significance levels

DISCUSSION

The present study investigated whether teachers' goal orientations towards teaching (mastery, work-avoidance and ability-approach) could, through self-efficacy and burnout measures, predict teachers' attitudes towards teaching. In line with this aim, hypothetical models were developed and tested.

Initially, descriptive statistics and correlations among the variables were evaluated. The results showed that mastery-goal orientation and ability-approach goal orientation scores were high among participating teachers with the former being considerably higher than the latter. In addition, the mean for participant scores for the work-avoidance goal orientation was low. Based on this, it is considered that

teachers' goal orientations for teaching were more focused on mastery. With regards to their goal orientation scores, teacher scores in the present study were at similar levels to Saban and Yıldızlı's (2017) study. In general, teachers' scores were high in the mastery-goal orientation, self-efficacy for teaching and attitudes towards teaching dimensions. Analysis of correlations between variables highlighted a positive relationship between ability-approach goal orientation and mastery-goal orientation as well as attitudes towards teaching. Ability-approach did not have a significant relationship with any other variable. There was a positive and significant correlation between mastery-goal orientations and self-efficacy and attitude towards teaching. Similarly, mastery-goal orientation was found to have a significant but negative relationship with burnout. An interesting finding was that no significant relationship was found between mastery-goal orientation and work-avoidance goal orientation. Similarly, work-avoidance goal orientation was found to have a negative significant relationship with self-efficacy and attitude towards teaching dimensions. Moreover, work-avoidance was also found to have a positive significant relationship with burnout. There are studies in related literature which have found; a significant positive relationship between ability-approach and mastery-goal orientation (Retelsdorf et al, 2010), non-significant relationship between mastery and work-avoidance relationship (Butler, 2007; Butler, 2012), a significant and high correlation between mastery-goal orientation and self-efficacy (Kucsera et al 2011; Retelsdorf et al, 2010; Throndsen and Turmo, 2012), a significant negative correlation between mastery-goal orientation and a positive correlation between burnout and work-avoidance (Retelsdorf et al, 2010). Furthermore, related literature includes studies that have found negative correlations between self-efficacy and burnout (Ayra and Kösterelioğlu, 2015; Herman, Hickmon-Rosa and Reinke, 2018; Schwarzer and Hallum, 2008; Skaalvik and Skaalvik, 2007). Similarly, few studies have also found positive correlations between self-efficacy and attitudes towards teaching (Çapri and Çelikkaleli, 2008; Demirtaş, Cömert and Özer, 2011). Those studies support the findings of the present study.

With regards to the hypothetical models developed in this research, firstly, Hypothesis 1 (H1) (Model 1) tested whether teachers' goal orientations (mastery, ability-approach and work-avoidance) could predict teachers' attitudes towards teaching through self-efficacy measures. The results showed that, through self-efficacy measures, mastery-goal orientation is a positive predictor and work-avoidance goal orientation is a negative predictor of attitudes towards teaching. Ability-approach goal orientation could not predict teachers' attitudes towards teaching. These findings can be interpreted as follows: It is considered that teachers with mastery-goal orientations (trying to learn more and professionalize) have higher levels of self-efficacy since they are aware of their professional qualifications and focus on developing those qualities. Thus, it is expected that teachers who focus on learning more would become teachers who can engage their learners and make effective use of a variety of teaching strategies. This result was, in fact, an expected outcome of the present study. Similar results were achieved in Retelsdorf and Günther's (2011) as well as Nitsche et al's (2011) studies. Teachers' self-efficacy beliefs about teaching activities have been found to be predictors of their emotional, cognitive and behaviouristic dimensions. Teachers who believe that they are efficient are more likely to be consistent in trying harder, being more willing to teach and being more open to change and adaptation. Moreover, there are studies in the literature which have found that teachers with high levels of self-efficacy create learning-centred classes (Wolters and Daugherty, 2007) and such teachers are more likely to assign students with challenging tasks that would enable them to think more critically and independently (Retelsdorf et al, 2010). Related literature and the findings in the present study indicate: Teachers who consider themselves to be self-efficient would act more consistently in making an effort to learn more, being more eager to learn and readjusting themselves in line with developments. Therefore, such teachers are likely to feel more successful when they see that they learn more about themselves in the classroom, when there are incidents that push them to think and when they can overcome problems and realize that they teach better than they did in the past. In such environments, outcomes for teaching and learning will be at desired levels for both teachers and students (Butler and Shibaz, 2008). The self-efficacy that teachers develop as a result of teaching practices will help teachers endure difficulties. Such situations will be predictors of attitudes towards teaching.

Another goal orientation that has been tested in this study was work-avoidance. As expected, teachers who have high levels of work-avoidance goal orientation are less eager to teach (Retelsdorf et al, 2010) and this prevents them from showing the desired performance in classrooms when they are faced with difficult situations. In addition, such teachers generally do not have the tendency to develop their skills for teaching. Such situations can negatively affect teachers' self-efficacy beliefs for teaching. The reason for this is the idea that teachers' teaching practices reflect their beliefs towards learning and, thus, their goals for students (Midgley, 2002). Therefore, teachers' beliefs of their self-efficacy for teaching can affect their attitudes and behaviours in classrooms (Dadandı, Kalyon and Yazıcı, 2016). For example, Gorozidis and Papaioannou (2011) have found that teachers' self-efficacy for teaching is a predictor of their attitudes to implement the curriculum. It is understood that teachers' orientations and the resulting self-efficacy perceptions can affect how they carry out the responsibilities of their profession.

Another goal orientation investigated in the present study was the ability approach. From an ability approach perspective, it is important that teachers' high-level teaching skills are observed by others and that such teachers become favourite teachers of school management and be constantly compared to other teachers. A notable aspect that should be discussed in relation to this goal orientation is that ability-approach goal orientations can differ across cultures (Shim, Cho and Cassady, 2013). In some cultures (e.g. the Turkish culture) doing a job just for the sake of showing others that they are doing the job is not something that is approved by society.

Therefore, ability-approach goal orientation is not expected to affect self-efficacy or attitudes towards teaching. A number of studies in the literature have also found that ability approach (i.e. performance approach) goal orientation was not correlated with self-efficacy (Middleton and Midgley, 1997; Shim and Ryan, 2005).

In hypothesis 2 (H2) (Model 2), it was found that mastery and work-avoidance goal orientations, through burnout measures, predicted attitudes towards teaching. Ability-approach, on the other hand, could not predict attitudes towards teaching through burnout measures. Burnout is an important dimension for teachers to be able to fulfil their teaching responsibilities. It is a known fact that the teaching profession requires high levels of efforts and, therefore, professionals working in education are known to be susceptible to burnout (Chang, 2009). Considering different types of goal orientations, in their efforts to be effective teachers with mastery goal orientations are expected to try hard, do research, learn and develop themselves and carry out activities that require effort and also support students in the learning process. Therefore, teachers with such mindsets are more likely to love their jobs, be happy when they leave home for work and when they work with students, appreciate students and try to affect them in a positive manner, be hopeful, not escape workload and try to be a successful teacher. These findings are in line with the findings of related literature. For example, Parker et al (2012), Retelsdorf et al (2010), Tönjes and Dickhäuser (2009) and Tönjes, Dickhäuser and Kröner (2008) have all found ability/mastery goal orientation to be negatively correlated to burnout levels. Similarly, in Retelsdorf et al (2010), it has been found that work avoidance goal orientation -since it is related to negative behaviour patterns- is a significant predictor of burnout levels. In fact, research studies have found that work-avoidance goal orientations can have negative effects on student learning (Gable, Reis and Elliot, 2000). Work-avoidance has also been found to be associated with emotional sensitivity in stressful work environments (Heponiemi et al, 2003), lesser personal well-being (Coats, Janoff-Bulman and Alpert, 1996) and negative emotions (Lench and Levine, 2008; Naidoo et al, 2012). In line with this, it is possible to argue that the negative consequences that this goal orientation can result in also negatively affect attitudes towards the teaching profession. As such, the findings of the present study support this argument. Another finding of this study was the insignificance of the correlation between ability-approach goal orientation and attitudes towards teaching through burnout measures. This finding is discussed in detail in the next paragraph considering the findings of Model 1 (H1) and Model 3 (H3).

The findings of Model 3 (H3) indicated that teachers' goal orientations for teaching are not indicators of their attitudes towards teaching. This finding can be explained as following: Factors affecting motivational beliefs are synchronized with a number of variables (Skaalvik and Skaalvik, 2007) and since people form their attitudes following certain experiences, it should be expected that such experiences would also affect other motivational factors. Therefore, attitudes towards teaching can be considered to be interrelated with other motivational factors. As Sarason (1977: 21) has noted, 'work is not a 'here and now phenomenon' unrooted in a perceived past and future'. Another finding in relation to H3 is that as teachers' mastery-goal orientation increases, so does their self-efficacy and this causes burnout levels to decrease which results in more positive attitudes towards teaching. In addition, as teachers' work-avoidance goal orientations increase, their self-efficacy decreases and this causes burnout levels to increase which negatively affects attitudes towards the profession. One other important finding was that ability approach did not have a significant effect on attitudes towards teaching through self-efficacy or burnout measures, nor was it a direct predictor of teachers' attitudes towards teaching. One of the explanations for why ability approach goal orientations did not have an effect on the variables studied can be: Ability-approach goal orientations indicate teachers have the tendency to show others that their teaching activities are adequate and successful. Therefore, this goal orientation can easily be affected by factors that encourage competition in the work environment. This study has been conducted with public school teachers in Turkey and it has been found that the control mechanisms existing in public schools in Turkey are not adequate in supporting a competitive job environment (Altun, 2014; Aslanargun and Göksoy, 2013; Kurtar, 2018). Therefore, the fact that there are not enough opportunities for teachers to be able to demonstrate their skills might prevent them from displaying certain behaviours associated with this goal orientation. Since mastery-goal orientation is perceived as an opportunity to develop skills and knowledge, this orientation is closely related to trying hard and resisting against difficulties and self-efficacy (Montecinos et al, 2014). Individuals with mastery-goal orientations evaluate themselves when faced with a new and difficult situation and are aware of what actions they should or should not take (Retelsdorf and Günther, 2011; Nitsche et al 2011). This awareness is very important for professional development. Therefore, teachers' goal orientations can affect their beliefs. Being inefficient and unsuccessful in a profession is one of the factors that can cause burnout. This can be related to self-efficacy at the same time. It can be argued that a teacher who considers him/herself as inefficient will be less likely to take action to become successful (Skaalvik and Skaalvik, 2007). Therefore, it is an expected outcome that teachers who display poor performance do not become successful in their jobs which can increase their burnout levels. This situation indicates that self-efficacy is a meaningful indicator of burnout, a finding that is supported by existing studies in the literature (Evers, Brouwers and Tomic, 2002; Brouwers and Tomic, 2000; Skaalvik and Skaalvik, 2007). It is possible that teachers who feel inefficient and who are not motivated to succeed or develop professionally will have negative attitudes towards teaching. And this situation indicates that burnout is a meaningful indicator of attitudes towards teaching. As such, there are a number of studies in the literature supporting this finding (Evers, Brouwers and Tomic, 2002); however, further studies in this area are needed to establish a stronger foundation.

CONCLUSION

While a number of different scales have been used in the present study, few sub-dimensions within scales were removed. For example, "relationship with students" goal orientation has not been evaluated in the present study. Similarly, classroom management sub-dimension of self-efficacy has not been evaluated either. The biggest problem that the researcher conducting this study experienced was the fact that the longer time it took teachers to complete the questionnaires the more bored they became which might have prevented them from giving honest and sincere responses. Therefore, the sub-dimensions mentioned above were removed in an effort to decrease the time that teachers would spend to complete the questionnaire items and increase the chances of receiving more reliable answers. In addition, the demographic data collected from participants were not analysed. Future research can integrate demographics such as teaching experience or the kind of school teachers' work into such models. Attitudes towards the teaching profession were considered as a variable that can be affected by the other variables investigated in the present study. Therefore, future research can investigate attitudes towards the profession as a variable that can affect the other variables being studied. In addition, researchers can also carry out in-depth investigations of how the ability-approach goal orientation differs across cultures. The present study is limited to teachers working in Turkey. Thus, the dynamics affecting teachers' ability approach goal orientations can be studied in other cultures (countries, regions, or cities). Alternatively, qualitative research studies that would investigate what school and classroom environments are associated with this goal orientation can be conducted. Case studies can also be conducted in order to better understand under what circumstances goal orientations change. Longitudinal studies can be carried out to better understand how teachers' goal orientations change over time. Last but not least, teachers' relationships with students, school management and families should also be investigated since those variables can be interrelated with teachers' goal orientations.

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A ROLE OF SIBLINGS IN PERCEPTION OF ACADEMIC SELF-EFFICACY AND SOCIAL SUPPORT

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ABSTRACT

An educational efficiency of an individual is strongly and bidirectionally connected with his/her self-perception determined by the unique family system and overall sense of social well-being. The role of parents is obvious and both theoretically and empirically well-researched. Nevertheless, academic self-efficacy may be significantly affected also by siblings, whose role is neglected by theory and research. Our research deals with various specifics of siblings' constellations and their impact on selected dimensions of academic self-efficacy (perception of school success, efficiency, educational dispositions, and ambitions). Our findings proved differences in all observed categories (gender, family order, age-distance) and indicate relative better academic self-efficacy (compared with a sibling) by females and respondents with a brother. Similarly, higher level of academic self-efficacy was detected by older siblings and respondents with a longer age-distance between them and their siblings. Moreover, the research points out the siblings-related specifics of social support perceived from a family. Conclusions are applicable in educational theory as well as in praxis of educational counselling with an intention to support equal opportunities in education and professional development.

KEYWORDS

Academic self-efficacy, educational counselling, perceived social support, siblings, social determination of education

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Highlights

- *A sibling's constellation of an individual influences his/her academic self-efficacy and slightly also perceived social support from his/her family.*
- *Specifics in gender, family order and in age-distance leads to differences in perceived educational success, efficiency, dispositions, and ambitions.*
- *Females refer about better social support from their family than males.*
- *Middle siblings perceive emotional support and readiness of the family to help in troubles as insufficient compared with other categories of respondents.*

INTRODUCTION

Family plays a crucial role in the psychosocial development of an individual. It is nearly impossible to find scientific arguments that would contradict this fact, representing one of the basic assumptions of developmental psychology and connected disciplines dealing with a psychological growth of a human being (Vágnerová, 2000; Langmeier and Krejčířová, 2006). A great responsibility for these processes is in the hands of parents, who ensure a huge variety of needs of their children and almost irreversibly form their personalities (Matoušek, 2003; Čáp and Mareš, 2001) including competencies for education (Fischer and Lipovská, 2013; Lipovská and Fischer, 2016).

Very often, these socializing processes in a family have yet other actors that sometimes stay hidden or marginal to psychological and educational theories, although they significantly influence the development of a child – her brothers and/or sisters. 'Incorporating study of siblings into family research provides novel insights into the operation of families as social and socializing systems' (McHale, Updegraff and Whiteman, 2012:913). Authors of this study highlight that in the USA, a higher percentage of youth aged 18 and less lives

in a common household with a sibling than with a father (data from 2010). In contrast, these authors found 33 990 citations for a keyword 'parent or parenting' but only 741 for 'sibling and relation or relationship' in abstracts of psychological and sociological publications.

Educators, teachers, social workers, and even scientists face a confusing question: why are siblings, having both similar genetic dispositions and a socializing environment in early childhood, so different? Hetler (2017) studies this issue from a viewpoint of evolutionary biology. According to his findings, a variety of personal traits of siblings is determined biologically and is only stressed by environmental factors like siblings' constellation. This evolutionary mechanism called adaptive diversification should support the adaptability of offspring to various kinds of circumstances and prevent it from lineage extinction.

Trying to explain differences between siblings in one family from the paradigm of social determination, Jensen and McHale (2015) researched a role of social comparison (Festinger, 1954) and expectancy (Rosentahl and Jacobson, 1968) in parental attitudes towards siblings. They proved the pure influence of parental beliefs about siblings' educational abilities on their school grades which resulted in the higher academic interest of children perceived by their parents as more competent. Paradoxically, differences in parental attitudes were not caused by the grades of their children. The authors suppose that these differences are caused by everyday social comparison of their children that escalates existing small differences between siblings in their early development. In every way, parental attitudes significantly modulate the perceived level of self-efficiency of their child that influences radically an academic achievement (Pajares, 1996).

Besides variability in mutual differences of brothers and sisters, we may ask how the pure fact of having/not having a sibling influences a child's cognitive development. Dunifon, Fomby and Musick (2017) base on highly apparent fact – siblings influence each other because they spend time together. In their study, children actively spent about half of their free time with their siblings and another 20% of their time with sibling present (brothers more than sisters; siblings with an age difference within three years more than age-distant siblings). Children without a sibling spent significantly more time only with their parents and occupied less with unstructured games. In this manner, children with a sibling may seem disadvantaged for education having less time with parents and enjoying less structured activities. Nevertheless, McAlister and Peterson (2013) proved that having child-aged siblings supports the development of a theory of mind - 'a representational understanding of others' minds including abilities to comprehend and predict others' mental states of true and false belief, memory, imagination, and the like, even in situations where these mental states are at odds with observable reality' (McAlister and Peterson, 2013: 1442). The authors conclude that these kinds of metacognitive abilities (undoubtedly important for educational processes) develop easier by children with sibling thanks frequent occasion to playful interactions.

It should be noted that there are many other siblings-related influences affecting an individual's academic achievement. Dealing with the effect of maternal age, Kalmijn and Kraaykamp (2005) proved a positive impact of this variable on children's educational attainment. However, this effect was almost three times less important than a level of parent's education. The study also examined the effect of birth-order that showed a slightly negative impact on education. Considering a mutual interconnection of the variables, the authors conclude that 'later-born children have a disadvantage which is compensated by the fact that they are born at a late age of the mother' (Kalmijn and Kraaykamp, 2005: 648). We should state that respondents of the study were the Netherlands born between 1918 and 1974; therefore, the conclusions may not be fully sociologically relevant.

The significance of birth order for a school success was researched also by Grätz (2018) in Germany. The author found that the presumed negative impact of birth order (as well as maternal age) on education is specific for socioeconomically disadvantaged families. In a logical correspondence with these findings are conclusions of Brenes-Camacho (2018) who studied relations between the number of children in family and children well-being in various developing countries. Although results vary from regions, the study generally proved that the number of children in household correlates positively with the number of working children and slightly also with a tendency to harsh discipline. The author concludes that a decline in fertility in those countries could contribute to an improvement in children's well-being.

Arising from these findings, our research deals with the role of the siblings in the academic self-efficacy of an individual. The perceived self-efficacy is a classical concept defined by Bandura (1994). It represents an individual's opinion about his/her ability to reach given goals and handle with various demands in his/her life. This concept consists from cognitive, motivational and emotional processes and simultaneously influences an individual's way of behaviour, thinking, and feeling as well as the area of self-motivation. The self-efficacy has various external sources including family-influences. 'Different family structures, as reflected in family size, birth order, and sibling constellation patterns, create different social comparisons for judging one's personal efficacy' (Bandura, 1994: 11). Obviously, siblings (as well as the fact of not-having a sibling) influence an individual's self-efficacy. In our research, we study specific influences of sibling's constellation on an education-related dimension of general self-efficacy, the academic self-efficacy (Pajares, 1996).

The objective of our pilot study (Krejčová et al., 2019) was to find if students' perceived school success, educational dispositions and career ambitions are influenced by their sibling's constellation. Despite restricted validity of our results by limited research sample (n=146), our analysis showed that first-born siblings rated their career ambitions as higher than their siblings, while later-born siblings assigned their ambitions more often as 'comparable'. Surprisingly, the higher career ambitions perceived by first-born siblings were not accompanied by self-reflection of better educational dispositions nor higher school success compared with a sibling. In our study, we researched also the issue of siblings' age-distance, finding that respondents with a sibling in an age-

distance between 4 and 6 years rated their relative dispositions (in comparison with a sibling) worse than other groups of respondents. Nevertheless, this result was not statistically significant. With respect to certain gender imbalance of our sample (112 females and 31 males), we revealed significant gender differences: females perceived their relative school success and educational dispositions (compared with a sibling) better than males. Moreover, respondents with a brother assessed their dispositions and school assessment as better compared with respondents with a sister.

Ramos-Díaz et al. (2016) studied an influence of different dimensions of social support (family, peers, and teachers) on the school engagement of adolescents (age between 12 and 15). According to their findings, the impact of family on the school engagement was both direct and indirect via the self-concept of an individual. Interestingly, family influenced a self-concept of respondents greater than peers even in the stadium of adolescence. Authors define the self-concept as a sum of individual's perceptions about him/herself that are interpret in correspondence with his/her personal assessment influenced by important others (Ramos-Díaz et al., 2016).

According to the study of Gutiérrez et al. (2017), the perceived support of family and teachers influence positively, significantly and directly the study engagement of respondents in the age between 14 and 22 (unlike the peer support that had not the predictive capacity for school engagement). In measuring of an influence of a family, the study used only a parent's scale; consequently, siblings were not included. Obviously, their impact on the school engagement could be similar to the influence of the family; however, taking into account the age similarity between siblings, the influence of siblings could resemble the influence of peers as well.

Facing the question of social support's similarity between siblings and friends, Voorpostel and Van Der Lippe (2007) researched that by adult respondents (not living in common household with their siblings) social support of friends resembles support of siblings, especially in practical aspects. On the contrary, emotional support is generally weaker between siblings than between friends. According to the study of Gondal (2012) based on data from 25 countries, adults with fewer siblings (2 or less) tend to compensate their social supportive network with stronger ties to their parents, other relatives, and close friends. Typically, relations with parents are a source of financial and instrumental support, whereas friends represent rather a source of emotional support. Comparing with other groups, singletons reported a greater tendency to social isolation and to increase in using of professional sources of social support.

Waite et al. (2011) directed their research on the relation of siblings' mutual warmth and coping of stressful events (specifically family-wide events, respondents' personal and siblings' personal events). Based on the reports of children and youth between 9 and 18, the authors conclude that the quality of siblings' relationship serves as a protective factor by family-wide events. Nevertheless, this effect was not proved by respondents' personal stressful events or by experiencing of siblings' stressors. Interestingly, any of these results were dependent on gender. A certain gender imbalance connected with siblings' relations was discovered by Lei et al. (2017). Their study deals with a gender-structure of siblings and its impact on education. According to their findings, being the oldest child brings educational benefits, but especially to males. The authors conclude that the educational resources of a family in China are distributed unfairly on behalf of sons. Therefore, in socioeconomically restricted families, being a girl and having a brother is a considerable disadvantage.

In our current research, we concentrate on verification of our previous findings with a bigger research sample. Moreover, we study relations of siblings' constellations and perceived social support that could influence and modulate a sense of academic self-efficacy.

MATERIALS AND METHODS

In our cross-sectional research, we had a research sample of 600 students of the Czech University of Life Sciences Prague selected by the method of convenience sampling. Having 93 only-children, merely remaining 507 respondents were suitable for an analysis of the sibling's influence. Out of the total, 341 of our respondents have one sibling, 133 respondents have two siblings and the remaining 33 respondents are from 4 or more children families. The data were collected between February and April of 2019.

In our previous research, we concentrate only on the relation of our respondents to one of their siblings (in case of having more) because of an insufficient number of respondents from 3-and-more children families. In this study, we decided to continue in this strategy considering the robustness of our set of hypotheses.

The average age of our respondents was 20.36 years. The sample consisted of 303 females and 285 males (by 12 respondents, the information was not available). Thanks to this proportion, we disposed of a gender imbalance from the previous study with a research sample containing 112 females and 31 males.

To explore the influence of siblings on students' academic self-efficacy, we created a structured questionnaire asking for the perceived level of school success, the energy needed to study something new, perceived educational dispositions and career ambitions. Participants responded to these questions relatively, in comparison with their sibling(s).

A level of respondents' social support was assessed by the Perceived Social Support Scale (PSSS) by Blumenthal et al. (1987). The questionnaire contains 12 items (plus 4 supplementary questions) that map a level of perceived support from family, friends and from an undefined area ('there is a man who is close to me' etc.). For the purpose of this study, we used only 5 separate items that deal with a social support from family. These questions ask for perceived overall support from the family, emotional support, possibility to talk about problems, help with decision making, and a willingness of the family to help in troubles.

The outputs were produced using data analysis software system IBM SPSS Statistics, version 25. Considering the nature of our research, we used Pearson's Chi-Square test of independence in a contingency table as a tool for analysis of quantitative data,

whereas a level of significance was 5%. For the analysis of the perceived social support, we used Kruskal-Wallis analysis of variance.

RESULTS

H0-1: *There are no gender differences in the perceived level of academic self-efficacy (in comparison with sibling/s).*

Considering gender differences, we obtain statistically significant results only in the category of perceived educational dispositions. Despite the weak significance, we can conclude that female respondents perceived their dispositions more often as 'better' and 'comparable' (in comparison with their siblings) than males, who asses their predispositions more often as 'worse'. Table 1 summarizes our findings specifically to each sub-hypothesis.

	Dimension	Gender	Frequencies			Chi-Square test	Result	*p*-value
			Better	Worse	Comparable			
H0-1a	School success	Female	148	35	70	9.27	Hypothesis cannot be rejected	.16
		Male	126	57	62			
H0-1b	Efficiency	Female	73	95	85	7.09	Hypothesis cannot be rejected	.31
		Male	48	103	91			
H0-1c	Dispositions	Female	119	25	110	13.73	Hypothesis was rejected	.03
		Male	105	51	87			
H0-1d	Ambitions	Female	114	31	106	7.01	Hypothesis cannot be rejected	.32
		Male	129	22	91			

Table 1: Gender differences in perceived level of academic self-efficacy, 2019 (source: own calculation)

H0-2: *There are no siblings-gender differences in the perceived level of academic self-efficacy (in comparison with sibling/s).*

In this viewpoint, gender differences were more determining. We obtain medium statistical differences in all studied dimensions of academic self-efficacy (see Tab. 2). Considering a gender of studied siblings, we had 238 respondents with a sister and 268 respondents with a brother. Therefore, a possible influence of gender-imbalance is negligible. According to the descriptive measures, respondents with a brother asses themselves as more school-successful than respondents with a sister. Respondents with a brother also asses their dispositions as better and, consequently, need less energy to study something new. We noticed significant differences also by ambitions, but the interpretation is unclear and requires further empirical validation. Although we did not analyse these results in a relation with a gender of respondents themselves, it is interesting to note that having a brother help respondents to feel more school-successful, efficient and disponed, but not as intensively more ambitious. This observation may indicate certain gender differences between the academic self-efficacy and an employment-related self-confidence.

	Dimension	Siblings' gender	Frequencies			Chi-Square test	Result	*p*-value
			Better	Worse	Comparable			
H0-2a	School success	Female sibling	119	51	67	581.57	Hypothesis was rejected	.00
		Male sibling	159	40	68			
H0-2b	Efficiency	Female sibling	52	96	88	554.43	Hypothesis was rejected	.00
		Male sibling	71	106	88			
H0-2c	Dispositions	Female sibling	100	39	98	571.12	Hypothesis was rejected	.00
		Male sibling	127	38	101			
H0-2d	Ambitions	Female sibling	116	22	97	532.22	Hypothesis was rejected	.00
		Male sibling	129	32	102			

Table 2: Siblings' gender differences in perceived level of academic self-efficacy, 2019 (source: own calculation)

H0-3: *The family order does not influence the perceived level of academic self-efficacy (in comparison with sibling/s).*
Similarly to the previous hypothesis, we found medium-significant differences between respondents with different family-order by all dimensions (see Table 3). Based on findings of descriptive statistic, we may assume that first-born children asses themselves more often as more successful at school while youngest children feel more often less successful than their sibling (compared with other categories). By the question about the energy needed to study something new, the first children chose a possibility 'less' than a sibling apparently more than other possibilities. The youngest children were the only category by which the most frequent response was not 'less' but 'comparable' with a sibling. All respondents asses their ambitions as higher than a sibling; anyway, the dominance of this response was most remarkable by the first children. The overall superiority of the first-born children may be slightly influence by the status of a university student that has not been reach by their siblings yet because of their younger age.

	Dimension	Family order	Frequencies			Chi-Square test	Result	*p*-value
			Better	Worse	Comparable			
H0-3a	School success	First-born sibling	151	19	49	616.71	Hypothesis was rejected	.00
		Youngest sibling	84	52	67			
H0-3b	Efficiency	First-born sibling	51	96	71	555.07	Hypothesis was rejected	.00
		Youngest sibling	52	69	80			
H0-3c	Dispositions	First-born sibling	110	28	81	576.19	Hypothesis was rejected	.00
		Youngest sibling	72	37	93			
H0-3d	Ambitions	First-born sibling	108	13	95	552.76	Hypothesis was rejected	.00
		Youngest sibling	93	27	83			

Table 3: Family order-related differences in perceived level of academic self-efficacy, 2019 (source: own calculation)

H0-4: *The age difference between siblings does not influence the perceived level of academic self-efficacy (in comparison with sibling/s).*
Comparably as by siblings' gender and family order, we found medium-significant differences (see Tab. 4) between 3 categories of age distance (a between-siblings' distance up to 3 years, between 4-6 years and more than 7 years). All categories asses themselves as more successful than their siblings; however, this dominance is relatively less by the first category of smallest age-distance. Analogically, all respondents need less energy to study something new than their siblings, but this possibility dominates less by the first category. This tendency was similar also by the perception of educational dispositions. All categories perceived themselves as better than siblings; by the first category, the relative difference between this and other responses is less. Similarly, all respondents assess themselves as more ambitious; however, relatively smallest dominance of this response appears by the middle category (age difference between 4-6 years). These differences may be caused by the fact that less age-distant siblings are in a similar phase of their educational trajectory. Therefore, they may have a more realistic base for the comparison (except the questions of ambitions that requires further empirical analysis).
H0-5: *There are no gender differences in the perceived social support from the family.*
From the viewpoint of respondents' gender, we found differences in all the studied dimensions of family-related social support. According to the results of Kruskal-Wallis analysis of variance (see Table 5), female respondents perceive more overall and specifically emotional support from their families, they refer to the better possibility to talk about problems, help with decision making and a willingness of the family to help in troubles.
H0-6: *There are no siblings-gender differences in the perceived social support from the family.*
Although we found significant differences between categories of respondents with brothers vs. respondents with sisters considering the academic self-efficacy, we did not obtain differences related to perceived social support. The hypothesis cannot be rejected.
H0-7: *The family order does not influence the perceived social support from the family.*
By this hypothesis, there are significant differences between categories of respondents with different family order, specifically in items of emotional support and willingness of the family to help in troubles (see Table 6). The middle siblings perceive this form of social support as insufficient, in contrary with all the other siblings' constellation. Although this statement requires further validation with broader research sample, it seems to be in a correspondence with a concept of 'sandwich' middle siblings that generally perceive less attention of their parents in comparison with both first- and last-born children.

	Dimension	Age-distance Better	Frequencies			Chi-Square test	Result	*p*-value
			Worse	Comparable				
H0-4a	School success	< 3 yrs.	85	27	41	570.71	Hypothesis was rejected	.00
		4 – 6 yrs.	96	37	50			
		> 7 yrs.	97	30	44			
H0-4b	Efficiency	< 3 yrs.	47	56	51	554.62	Hypothesis was rejected	.00
		4 – 6 yrs.	41	73	68			
		> 7 yrs.	36	73	59			
H0-4c	Dispositions	< 3 yrs.	63	29	62	566.44	Hypothesis was rejected	.00
		4 – 6 yrs.	84	28	71			
		> 7 yrs.	80	21	68			
H0-4d	Ambitions	< 3 yrs.	73	19	60	538.08	Hypothesis was rejected	.00
		4 – 6 yrs.	86	18	79			
		> 7 yrs.	87	18	62			

Table 4: Age-distance related differences in perceived level of academic self-efficacy, 2019 (source: own calculation)

	Dimension	Min	Max	Gender	Mean	Std. Dev.	Std. Error Mean	Result	p-value
H0-5a	Overall support	0	7	Female	6.21	1.28	.07	Hypothesis was rejected	.01
				Male	6.17	1.11	.07		
H0-5b	Emotional support	0	7	Female	5.99	1.40	.08	Hypothesis was rejected	.00
				Male	5.69	1.44	.09		
H0-5c	Talking about problems	0	7	Female	5.53	1.60	.09	Hypothesis was rejected	.02
				Male	5.26	1.63	.10		
H0-5d	Help with decision making	0	7	Female	5.58	1.50	.08	Hypothesis was rejected	.02
				Male	5.24	1.65	.10		
H0-5e	Help in troubles	0	7	Female	6.26	1.30	.08	Hypothesis was rejected	.03
				Male	6.18	1.12	.07		

Table 5: Gender differences in perceived social support, 2019 (source: own calculation)

	Dimension	Min	Max	Family order	Mean	Std. Dev.	Std. Error Mean	Result	*p*-value
H0-7a	Overall support	0	7	First-born sibling	6.09	1.28	.09	Hypothesis cannot be rejected	.05
				Youngest sibling	6.32	1.03	.07		
H0-7b	Emotional support	0	7	First-born sibling	5.65	1.52	.10	Hypothesis was rejected	.04
				Youngest sibling	6.03	1.28	.09		
H0-7c	Talking about problems	0	7	First-born sibling	5.31	1.63	.11	Hypothesis cannot be rejected	.38
				Youngest sibling	5.46	1.53	.11		
H0-7d	Help with decision making	0	7	First-born sibling	5.31	1.57	.11	Hypothesis cannot be rejected	.14
				Youngest sibling	5.46	1.53	.11		
H0-7e	Help in troubles	0	7	First-born sibling	6.14	1.21	.08	Hypothesis was rejected	.02
				Youngest sibling	6.40	1.04	.07		

Table 6: Family order-related differences in perceived social support, 2019 (source: own calculation)

H0-8: *The age difference between siblings does not influence the perceived social support from the family.*
We found no statistically significant differences regarding this presumption; the hypothesis cannot be rejected.

DISCUSSION

Compared with our previous study (Krejčová et al., 2019), we worked with another, broader research sample and dealt not only with dimensions of the academic self-efficacy, but with the perceived social support as well. In the current research, we found fewer gender differences between respondents. While female respondents had assessed themselves as more school-successful and better educationally disponed in the previous study, the broader research revealed female dominance only in educational dispositions.
On the other hand, we found more siblings-related gender differences. In the previous study, respondents with a brother had assessed their dispositions and school success as better compared with respondents with a sister. The current research proved differences between respondents with brothers and sisters in all observed dimensions of academic self-efficacy. Generally speaking, the differences point out on the stronger perceived academic self-efficiency (relatively compared with a sibling) by respondents with a brother. These findings seem to correspond with a meta-analytical study of Voyer and Voyer (2014) which confirms an overall superiority of females in school marks. This statement agrees with a stereotype about better school assessment by girls that is broadly extended. In the light of findings of Jensen and McHale (2015), we should consider that the existence of this stereotype may influence parental expectations and therefore reinforce these gender differences in education, especially in the academic self-efficacy and, consequently, in the school assessment as well.
Moreover, our research revealed more differences between respondents with a different family order and age-distance in comparison with the previous study that had found differences only in the career ambitions of first-born children, assessed more frequently as 'higher' compared with a sibling. The level of perceived school success, educational disposition and needed energy invested in learning had been not different (in terms of statistical significance) from later-born children. Current research proved statistically significant family order-related differences in all observed dimension of the academic self-efficacy. Based on descriptive analysis, the data indicate the dominance of first-born children in perceived school success, efficiency, and educational dispositions as well as in ambitions. Moreover, our current research pointed out on the role of age-distance in siblings' constellations (compared with previous research complicated by a limited number of respondents). However, these differences require further empirical analysis because in case of younger siblings, better academic self-efficacy by more distant siblings may be caused by the fact that these siblings are too young for serious comparison.
The role of family-order in education is an objective of both scientific research and a stereotyping. Kalmijn and Kraaykamp (2005) proved a slightly negative impact of birth-order on education. On the contrary, a metanalytical study of Steelman (1985) questions the perceived superiority of the firstborn child, because the possible advantage of his position consists of non-shared socioeconomic resources of the family. However, Steelman (1985: 381-382) points out that 'the general tendency for families to move upward in economic standing by the time later-born children arrive may counteract this initial advantage'.
Our research points out also on differences in perceiving of social support. Because of the nature of our variables, we did not analyse a relationship between total scores from both questionnaires. However, we presumed a positive dependence between the social support and the academic self-efficacy, because a family-influence is one of the important sources of the self-efficacy in general (Bandura, 1994). We revealed gender-related differences in all studied dimensions of family-related social support (overall support from the family, emotional support, a possibility to talk about problems, help with decision making and a willingness of the family to help in troubles) perceived more by females. This observation is in a contradiction with a conclusion of Waite et al. (2011). According to their study, the quality of siblings' relationship serves as a protective factor by family-wide events but not by personal stressful events nor by experiencing of siblings' stressors. Interestingly, they found any gender-dependency of the results. This difference from our study may be caused by another objective, methodology and also by age specifics because the cited study dealt with children and youth between 9 and 18.
Based on interpretation of both parts of our research, we may conclude certain superiority of female respondents in perceiving of both stronger academic self-efficacy compared with a sibling and better social support from their family. Although this statement requires further empirical verification, it is in correspondence with findings of Gutiérrez et al. (2017) who stated that the perceived support of family and teachers influence positively, significantly and directly the study engagement of respondents.
In analysis of siblings-related factors of perceived social support from the family, we noticed certain inferiority of middle siblings. This finding requires further empirical analysis, because our research sample contains only 63 middle children. However, it is in a great correspondence with a study of Salmon (2003) that revealed fewer positive attitudes toward their family and more positive views toward their friends by middle siblings compared with both first- and last-born children. The author explains this finding in a light of a weaker perceived parental investment by the middle children. Interestingly, the study of Salmon, Cuthbertson and Figueredo (2016) refers about a moderately positive impact of the family order on a prosociality, whereas the greater increase in prosocial measures was observed between the first- and second-born children.
In the interpretation of our findings, it is necessary to consider their restricted ecological validity, because they are plausible only for students of the Czech University of Life Sciences Prague. The internal validity enables their application in counselling services and in support of students' personal growth at this institution, especially in the Career Centre at the Faculty of Economics and Management. The external validity

of the research is limited; however, our findings bring stimuli for further research at other universities and even in different educational institutions.

The next factor that may limit the validity of our findings is the inclusion of half-blood related siblings into the research sample. This factor limits biological interpretations based on shared genetic equipment. Nevertheless, we decided to include the half-blood siblings in correspondence with a statement of Steelman (1985: 355): 'since most social scientists espouse environmental rather than physiological interpretations of the impact of sibling structure, the usual decision is to include any living children present in the household, blood-related or not'. Moreover, our study limits itself to the 'smaller families' with two children. Respondents from 3-and-more children families are included, but we assessed only their relations to one of their siblings (the first one they mentioned in the questionnaire, usually the older one). This fact may limit the plausibility of our findings because we extracted only certain elements from the comprehensive system, which a family undoubtedly is (McHale, Updegraff and Whiteman, 2012). This fact may be restrictive for possible cross-culture interpretations, because the Czech Republic belongs to countries with a considerable dominance of 2-children families, as we may induce e.g. from the international comparative study by Gondal (2012) with a research sample of 32,712 respondents from 25 countries using selective methods of random or multistage selective choice.

CONCLUSION

Primary socialization radically determines the educational and career trajectory of an individual. Therefore, the influence of parents was the subject of many theoretical studies. Despite their undeniable importance, formal education may be significantly influenced also by siblings. Expectably, this influence is observable in the development of social skills (Vágnerová, 2000). Nevertheless, our research shows that siblings' constellation may affect also the academic self-efficacy, specifically a perceived level of school success, efficiency, educational dispositions, and career ambitions.

Although our findings are plausible only for the population of students of Czech University of Life Sciences Prague and their broader generalization requires further research with a more heterogeneous sample, they may be fruitful for the area of the university counselling services and for overall support of students' personal and professional growth. Further research should deal with other differences of siblings' constellations, namely the number of siblings as a categorization variable with special attention to specifics of only-children, twins, and respondents with more than two siblings. Moreover, we would like to study in a more detail a relationship between the academic self-efficacy and the social support by siblings. Nevertheless, the conclusions of our current study themselves emphasize the need to study both self-efficacy and social support as crucial factors of study-engagement in a context of siblings' constellation and family dynamics.

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Full research paper

ENHANCING ATTRACTIVENESS OF SECONDARY AGRICULTURAL EDUCATION IN THE CZECH REPUBLIC

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ABSTRACT

Introducing innovative teaching methods at agricultural high schools is linked to enhancing their attractiveness for students. The article aims to contribute to addressing this issue. Its framework is the discourse on the knowledge society. Students, who at the same time educate other people, presented their suggestions and ideas about inspired teaching in a questionnaire survey, including lifelong and community education at agricultural high schools. In particular, they emphasized the introduction of new trends and topics that are related not only to agricultural but also to other activities in the management of natural resources. They singled out teaching using practical and activation methods. They considered lifelong and community education in the framework of agricultural high schools as a possibility and as beneficial. The results achieved in the research can also be used in teaching at the Institute of Education and Communication (IVP) at the Czech University of Life Sciences Prague (CULS Prague).

KEYWORDS

Agricultural education, innovations, knowledge society, lifelong learning, school community function

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Highlights

- *Secondary agricultural schools have the same position as other secondary schools.*
- *Necessity to interconnect specific subjects with practice, introducing new topics related to nature and its management.*
- *The lifelong learning is perceived as very important for secondary agricultural schools as well as their role of community centres.*
- *A possibility to improve the position of secondary schools could consist in a replacement of the existing school funding system.*

INTRODUCTION

Two streams are apparent in the discourse about the knowledge society. The first one can be called rationally optimistic and its main representatives are the authors from the initial periods of the said discourse (Blau and Duncan, 1967; Bell, 1973). Their optimism incorporates the belief that knowledge will push ideological and political prejudices away from the development of society, thus freeing the way for technology as the main factor of economic development. Authors, who also included the social dimension in the development, problematized this point of view. They introduced a different view stating that access to higher levels of education does not necessarily result in a reduction of social inequality (Boudon, 1973; Bowles and Gintis, 1976). They incorporated broader social and cultural environment in the relationship between education and the ability to utilize it (Willis, 1977; Goleman, 1996). At the same time, a group of critics formed in the second stream, pointing out to the functioning of schools as organizations supporting the existing order in society, and thus also the reproduction of inequalities (Bourdieu and Passeron, 1970; Illich, 1973). The critique of education systems in contemporary society has consequently been established. It focuses primarily on the concepts and processes of devaluation, commercialization and market orientation of education (Lohmann and Rilling, 2002). The critical stream culminates in Liessmann's "Theory of Miseducation" (Liessman, 2009).

The abovementioned discourse about education society

reflects general trends in the development of contemporary society, connected with the globalized economy, troubles the welfare state is facing, shifts in the nature of labour and conditions on the labour market caused by computerization, stagnation and so-called loosening of the middle class. Due to these and other changes, education has lost the ability to ensure a good job and career. The phenomenon of education, deprived of this former advantage, is trying hard to establish its "utility value". However, we cannot altogether give up on high quality education and the increase in the number of educated people. Education is considerable important for the whole society. As stated by Jiménez Bandala and Andrade (2017: 102) 'education is an instrument by which a society is reproduced socially through their ideals, values and habits'. The subject matter of this paper falls within these issues.

European agriculture is currently facing a number of challenges as evident from many official EU-documents (European Commission, 2010). Whether it is using up-to-date knowledge and technology, or solving the impact of climate change, it is evident that farming practices will increasingly need to be developed at all levels by appropriately educated professionals who will be able to reflect current development. On the other hand, it is necessary to see that agriculture is currently not a prestigious and sought-after profession. That is why raising the attractiveness of secondary education should be a societal priority, as it ultimately affects strategic objectives such as food security and self-sufficiency or sustainable economic growth. The need to put an accent on new approaches leading to sustainable farming results from several recent studies, e.g. The Sustainability in European Agricultural firms (Dos-Santos and Mota, 2018). There is evident that agricultural education, its performance, effectiveness as well as attractiveness is an important stabilizing factor for rural society which results for instance from European Economic and Social Committee opinion (European Economic and Social Committee, 2018).

On a practical level, countries with high number of university students among their population are usually considered education societies. In this respect, the Czech Republic falls behind other European countries. If we take the whole educational structure as an indicator, though, the Czech Republic will move to a better position as it only has a very low number of people with only basic education and one of the highest shares of secondary school students compared to other European countries. In 2014, the percentage of people with the level of education ISCED 0-2 was 6.9%, with the level of education ISCED 3-4 it was 71.1% and with the level of education of ISCED 5-8 it was 22%. For comparison, the average values for EU countries are for ISCED 0-2: 23.6%; ISCED 3-4: 46.4%; and ISCED 5-8: 30%[1] (Eurostat, 2019).

Compared to OECD countries, the Czech Republic spends a smaller share of the GDP on education (4.4% vs. 5.3% – the average in OECD countries) and of total government spending (8.9% vs. 11.6% – the average in OECD countries). As far as unemployment rates by education level are concerned, the Czech Republic ranks among countries with the most favourable results. At the same time, teachers' salaries at different levels of education are monitored and compared to average wages of workers with similar education as teachers. In this respect, the Czech Republic shows results that indicate that the country does not appreciate the teaching profession appropriately (MŠMT, 2019a).

In the framework of the discourse on contemporary education at theoretical and practical levels, lifelong learning is also a fundamental point. This is true for Liessmann (2009) as a representative of theoreticians as well as for the so-called Bologna Process. It can also be found in the national strategic papers on education and education policy, like the Strategy of Educational Policy of the Czech Republic till 2020 and Long-Term Plan for Education and Education System Development of the Czech Republic 2015-2020 (MŠMT, 2019b, 2019c). For this reason, the article also focuses on lifelong learning.

The 2015-2020 Long-term Plan for Education and Education System Development of the Czech Republic 2012-2020 could be an opportunity for schools to re-establish their role as important actors. The traditional existence "brick and mortar" schools provides them with an opportunity to become a central place of so-called community-based learning in various forms and segments of educational activities, including lifelong learning programs (MŠMT, 2019b). In other words, they should also play a role of community education. According to Biriescu and Babaita (2014), the priority of community education should be to develop new skills and communication skills and to cooperate with educational institutions within rural communities – e. g. local authorities, local action groups, entire families and various local associations and organizations. Such activities are often implemented within EU-Leader programmes (European Network for Rural Development, 2011).

We can find many examples showing the role of schools as community centers. According to the National Clearinghouse for Educational Facilities (Bingler, Quinn, Sullivan, 2003), schools are being built in shopping malls, in zoos, or in storefronts. Some are reaching out to homeless and sharing space with social service agencies. Some schools are forging partnerships to share facilities with museums, community colleges, Boys and Girls Clubs, artistic groups, and municipalities. Many communities are also developing large multipurpose community facilities that include schools, recreational facilities, and performing arts centers (Sullivan, 2002). The concept of schools as community centers and their role is analyzed also in many research projects. In the United States, this idea has been developed, for example, by Kappagoda and Kuhlmann (2013) in the case of the project Smart School Siting: How School Location Can Make Students Healthier and Communities Stronger.

Many innovative approaches, how schools can be built to provide not only classical teaching and learning but also to strength links to the community, appeared during last decade, as mentioned above. This fact points out that the role of schools as community centers is topical worldwide.

1 According to ISCED 2011, a standard classification of education, ISCED 1-2 corresponds to basic level of education (i.e. primary and lower secondary education), 3-4 corresponds to higher secondary and post-secondary education, which in the Czech Republic means earning a "maturita" degree or a certificate of apprenticeship, and the 3rd ISCED group 5-8 comprises tertiary education (in the Czech Republic this also includes higher vocational schools).

An example may be an approach of the American National Clearinghouse for Educational Facilities: According to Bingler, Quinn and Sullivan (2003: 3) 'If the school of the future needs to be designed as a learning center for the entire community, its development must begin with a planning and design process that includes community members and reflects their needs. The idea of citizen participation reflects John Dewey's assertion that we not only need education in democracy, but democracy in education. By engaging students, parents, educators, and a wide variety of citizens in planning and designing schools as centers of community, the best aims of a democratic society are served by both process and product'.

Inspirational examples can also be found in Europe. For example in Italy, the law enables to create networks including schools, local authorities and other public or private bodies which can tackle educational issues. It creates environment for new initiatives to promote social inclusion at a local area level. Innovative approaches in education are typical for Finland. The project "Lighthouse" was recently launched to support municipalities' strategic planning and national development of basic education. The project is focused on early childhood education, but also on upper secondary education (European Commission, 2018).

The article limits its scope to secondary education and specifically to secondary agricultural education in the Czech Republic. These processes are framed by the topic of so-called education for sustainable development. Its aim is to provide information that systematically supports the planned realization of the main research event as part of the empirical part of a PhD thesis focused on the process of decentralization, optimization and improvement of secondary agricultural education in the Czech Republic. Expert interviews will make use of the findings about the possible enhancement of the attractiveness of secondary agricultural education. Attitudes, suggestions and recommendations from the representatives of "informed public opinion" will be compared to attitudes, suggestions and recommendations of experts, who will be able to look at them through the lens of their possible realization in relation to the conditions and needs of an institutional solution.

The secondary objective was to assess the findings about Teaching of Practical Subjects (hereinafter as UPV) and Teaching of Specialized Subjects (hereinafter as UOP) students at IVP at the Czech University of Life Sciences Prague, which may contribute to the improvement of how these fields of study are taught, with respect to the fact that these fields of study fall into the Specialization in Pedagogy group, but are taught at an agricultural university.

MATERIALS AND METHODS

The material that was gathered and processed for the purpose of this article forms a basis of a contribution aimed to re-establish the prestigious position of secondary schools that specialize in agricultural education in the above-mentioned context. According to the Registry of Schools and Educational Facilities, there are 185 schools and educational facilities in the Czech Republic that offer disciplines from the group of specializations No. 41, Agriculture and Forestry (MŠMT, 2019d).[2] As part of network optimization, secondary schools merged in the 1990s and the process is currently being evaluated. The mergers affected also agricultural high schools. As a result, relatively complicated educational complexes emerged that offer a variety of fields and levels of education.

1. Secondary schools offering predominantly agricultural fields of study

- 10 secondary schools and vocational schools (hereinafter as SOŠ and SOU) offer exclusively the fields of study in the group 41 (Agriculture and Forestry).
- 21 SOŠ and SOU offer predominantly the fields of study in the group 41 and at the same time offer 1 - 2 groups of related fields, most often (in the order of) Ecology and Environmental Protection, Veterinary and Veterinary Prevention, Entrepreneurship in the Fields, Branches, General Vocational Training, Business, Mechanical Engineering and Engineering Production, Construction, Gastronomy, Hotels and Tourism, Transportation and Communications.
- Four of these schools have also been accredited as educational institutions – higher vocational schools (hereinafter as VOŠ).

2. Secondary schools where agricultural fields of study are offered along with other fields of study

- 48 SOŠ and SOU offer the fields of study in the group 41 along with other 2 to 5 other fields of study.
  One of these schools offers instruction as part of VOŠ and in 7 cases the SOŠ or SOU in question has merged with a primary school – hereinafter as ZŠ. In case of these schools, agricultural fields of study have an equal status as other disciplines.
- 96 SOŠ and SOU offer the fields of study in the group 41 along with more than 5 other groups.
  One school also acts as VOŠ and 8 schools have merged with primary schools. At these schools, the fields of study in the group 41 are deemed less important.
- 10 schools provide both vocational and general education as in this case SOŠ and SOU have merged with grammar schools.
- In one case, the school has also merged with a primary school.

The data for this article were collected by means of a questionnaire survey. The questionnaire research was focused on gathering attitudes, suggestions for solutions and recommendations aimed at increasing the attractiveness of secondary agricultural education. The specific research sample consists of people who have a stake in the subject matter of the study UPV and UOP in part-time form of study at the Institute of Education and Communication (hereinafter as IVP) at the Czech University of Life Sciences Prague. These people are self-educated and, at the same time, have certain experience in educating others and follow public affairs concerning education

2 As of 1 January 2009, the Ministry of Education, Youth and Sports CR took responsibility for the Classification of Basic Fields of Study (KKOV). From KKOV results the numbering of fields of study at primary schools, secondary schools, music schools and higher vocational schools (the AKSO numbering) and the numbering of fields of study at universities (AKVO).

and schools. A total of 141 questionnaires were distributed between 17 March and 22 April 2018 to 104 UPV students and 37 UOP students. These students attended a consultation session, where 87% UPV and 100% UOP students were present. The return rate of the questionnaire was 100%.

In order for the questionnaire research to guide authors towards the goal of becoming an inspiration for the following core research, attention was focused on gathering attitudes, suggestions for solutions and recommendations aimed at increasing the attractiveness of secondary agricultural education by improving the quality of vocational education at secondary schools together with its decentralization.

In addition to identification questions allowing such critical assessment, the questionnaire survey focused on key questions grouped into four blocks:

- assessment of the position of agricultural high schools (hereinafter as SZeŠ) in the framework of secondary vocational schools,
- recommendations for enhancing SZeŠ attractiveness,
- attitudes and suggestions for providing lifelong learning at SZeŠ,
- attitudes to the role of SZeŠ as community centres.

Particular attention was also given to the analysis of so-called neutral answers ("I don't know, I'm not able to say" – to questions belonging to blocks 2, 3 and 4), as they express the level of respondents' cluelessness where innovative teaching forms and methods are concerned, as described in strategic papers, whose aim is to improve vocational education at secondary level, with enhancing the attractiveness for students as an accompanying effect.

The data obtained from the questionnaire survey were processed by statistical methods of the 1st degree (absolute and relative frequency). For some questions the dependence between UPV and UOP students' responses was assessed by contingency table using chi-squared test, the Pearson´s contingency coefficients.

Chi-square test, also known as Pearson´s chi-square test, is a nonparametric or free distribution test, considered as one of the most useful statistic methods (McHugh, 2013). Chi-square test assesses whether an association exists between two variables by comparing the observed frequency and to the frequency that would be expected if the variables are independent of each other. The test is represented as follows:

$$\chi^2 = \sum \frac{(f_0 - f_e)^2}{f_e} \quad (1)$$

where χ^2 is the chi-square value, f_0 is the observed frequency, f_e is the expected frequency.

The initial conditions were as follows:

- H0: the variables are independent,
- H1: the variables are dependent,
- Selected level of significance: $\alpha = 0.05$.

Descriptive characteristics of the mean and the median were observed for cardinal characteristics. More complex statistical procedures were not used for two reasons. Firstly, the research sample is not very large and secondly, the results of the questionnaire survey are not supposed to be used for verification of hypotheses, but as an inspiration for the follow-up expert interviews that will study the subject matter in depth. The findings will be used in a follow-up qualitative research (expert interviews with secondary school managements) with the aim to deepen the knowledge of the given subject. These interviews will be deeper performed with regard to findings about the possible enhancement of the attractiveness of secondary agricultural education. Attitudes, suggestions and recommendations from students will be compared with, attitudes, suggestions and recommendations of experts, who will be able to look at them through the lens of their possible realization in relation to the conditions and needs of an institutional solution. Such interviews will take place at secondary schools, where the agricultural education prevails or is equal to other teaching programmes.

RESULTS

The results are divided into six sections - description of the sample (profession, experience with educating other persons and with agricultural education), evaluation of SZeŠ position (among other fields of study and including fields of study with a better and worse position), recommendations how to increase SZeŠ attractiveness, attitudes and ideas about providing lifelong education at SZeŠ, attitudes and ideas about the role of SZeŠ as community centres, comparison of "I don't know" answers to questions expressing attitudes. The results offer a sufficient basis for discussion and drawing conclusion. The discussion focuses on methodological aspects and knowledge for a follow-up research event, as well as for pedagogical purposes at IVP.

SAMPLE DESCRIPTION

Sample description

The share of pedagogical and non-pedagogical staff in the sample is not even, with employees in fields other than education dominating the sample. The ratio is more even in case of students of the UPV field of study.

Profession	UPV	UOP	Total
Teacher	45 (43.3%)	13 (35.1%)	58 (41.1%)
Other	59 (56.7%)	24 (64.9%)	83 (58.9%)
Of which:			
- clerk	15 (25.4%)	13 (54.1%)	28 (33.8%)
- policeman	15 (25.4%)	0 (0.0%)	15 (18.1%)
- educator	6 (10.2%)	0 (0.0%)	6 (7.2%)
- businessman	4 (6.8%)	1 (4.2%)	5 (6.0%)
- adviser	3 (5.1%)	0 (0.0%)	3 (3.6%)
- other	16 (27.1%)	10 (41.7%)	26 (31.3%)
Total	104 (100.0%)	37 (100.0%)	141 (100.0%)

Table 1: Respondents' professions

Students of teaching disciplines at IVP are often people who seek to obtain a university degree this way regardless of the field of study. As Table 2 shows, these people also have experience with educating others.

Experience with education	UPV	UOP	Total
Yes – primary school or nursery	25 (24.0 %)	8 (21.6 %)	33 (23.4 %)
Yes – high school	45 (43.3 %)	15 (40.5 %)	60 (42.6 %)
Yes - university	1 (1.0 %)	2 (5.4 %)	3 (2.1 %)
No	33 (31.7 %)	12 (32.4 %)	45 (31.9 %)
Total	104 (100.0 %)	37 (100.0 %)	141 (100.0 %)

Table 2: Experience with educating other people

Most respondents (78.1%) have experience with educating other people; 62.5% of them at secondary schools. With regards to subsamples, the results differ neither in respect to absence of experience nor in respect to the prevalence of experience with education at secondary schools (this always concerns the majority of those who do have the experience).

Field of study	UPV	UOP	Total
Out-of-school activities	26 (25.0 %)	0 (0.0 %)	26 (18.4 %)
Agricultural	7 (6.7 %)	10 (27.0 %)	17 (12.1 %)
Gastronomy	13 (12.5 %)	0 (0.0 %)	13 (9.2 %)
Mechanical engineering, engineering	8 (7.7 %)	3 (8.1 %)	11 (7.8 %)
Beautician, hairdresser	6 (5.8 %)	0 (0.0 %)	6 (4.3 %)
Environmental	0 (0.0 %)	6 (16.2 %)	6 (4.3 %)
Other	10 (9.6 %)	6 (16.2 %)	16 (11.3 %)
None	34 (32.7 %)	12 (32.5 %)	46 (32.6 %)
Total	104 (100.0 %)	37 (100.0 %)	141 (100.0 %)

Table 3: Fields of study that respondents have experience with

Respondents who have experience with educating other people have gained this experience primarily in the fields of study agriculture, gastronomy and mechanical engineering. They gained the experience at secondary schools and higher level schools. Respondents who reported having worked at elementary schools were involved in out-of-school activities for pupils. This applies exclusively to UPV students. On the other hand, compared to UPV students, UOP students showed a relatively high level of utilization of experience connected to work in agriculture. However, as Table 4 shows, this finding is not reflected in the evaluation of their personal experience with agricultural schools.

Indicator	UPV	UOP	Total
Mean	4.2	3.8	4.0
Median	4.8	4.0	4.4

Note: In self-evaluation, respondents used a scale from 1 (a lot of experience) to 5 (no experience).

Table 4: Experience with agricultural schools

Evaluation of SZeŠ among other fields of study indicating better and worse fields of study

Most respondents agree that the position of SZeŠ is the same compared to other secondary schools. No respondents claimed it was better. UOP students were far more critical while at the same time they had more experience with agricultural schools and also often had experience with educating others in agricultural disciplines.

Position	UPV	UOP	Total
Same	77 (74.0 %)	17 (45.9 %)	94 (66.7 %)
Worse	27 (26.0 %)	20 (54.1 %)	47 (33.3 %)
Better	0 (0.0 %)	0 (0.0 %)	0 (0.0 %)
Total	104 (100.0 %)	37 (100.0 %)	141 (100.0 %)

Table 5: Position of SZeŠ among other secondary schools

In this case, the dependence between the UPV and UOP students´ responses has not been proven (the Pearson's coefficient of contingency is 0.25). Therefore, the hypothesis H_0 about the independence of the variables has not been rejected and there can be concluded that no dependence exists between whether the respondents study the field of UPV or UOP.

Field of study	UPV	UOP	Total
Business schools	13 (36.1 %)	14 (41.2 %)	27 (38.6 %)
Engineering and mechanical engineering	6 (16.7 %)	10 (29.4 %)	16 (22.9 %)
Grammar schools	5 (13.9 %)	10 (29.4 %)	15 (21.5 %)
Apprenticeship	8 (22.2 %)	0 (0.0 %)	8 (11.4 %)
Medical schools	2 (5.5 %)	0 (0.0 %)	2 (2.8 %)
Teaching schools	2 (5.5 %	0 (0.0 %)	2 (2.8 %)
Answers total	36 (100.0 %)	34 (100.0 %)	70 (100.0 %)

Table 6: Fields of study occupying better positions than SZeŠ

The result show, that business schools have achieved the best position, at the second and third place, there are engineering and mechanical engineering and grammar schools, and at the bottom apprenticeship and teaching schools. The relationship between the UPV and UOP students´ responses was not confirmed (the Pearson's coefficient of contingency 0.49). Therefore, the hypothesis H_0 about the independence of the variables was not rejected. There can be concluded that no dependence exists between whether the respondents study the field of UPV or UOP.

Recommendations to enhance attractiveness of SZeŠ

The answers presented in Tables 7-11 clearly show that a large portion of respondents replied the answer "I don't know" (see Section 6 of the Results and Discussion). This is in line with the results outlined in Table 4, where respondents informed about the little experience they had with this secondary school specialization. Tables 7-11 include answers of only

those respondents who have given some recommendations. For this reason, their numbers vary in different tables and subsamples.

Recommendation	UPV	UOP	Total
New trends, topics	22 (44.0 %)	13 (50.0 %)	35 (46.0 %)
Better connection to practice	12 (24.0 %)	10 (38.5 %)	22 (29.0 %)
No need to change anything	3 (6.0 %)	0 (0.0 %)	3 (4.0 %)
Other	13 (26.0 %)	3 (11.5 %)	16 (21.0 %)
Total	50 (100.0 %)	26 (100.0 %)	76 (100.0 %)

Table 7: Recommendations to enhance attractiveness – content of lessons

Regarding the content of lessons, respondents often suggested attractiveness could be enhanced by following new trends (mainly using the latest technological findings) and topics (most often organic farming, floristry, fishkeeping) and better connection to practice. In this case, the dependence between the UPV and UOP students´ responses has not been proven (the Pearson's coefficient of contingency is 0.25). Therefore, H_0 about the independence of the variables has not been rejected. Therefore, it can be concluded that no dependence exists between whether the respondents study the field of UPV or UOP.

Recommendation	UPV	UOP	Total
More practical methods	24 (52.2 %)	15 (53.6 %)	39 (52.7 %)
More activation methods	20 (43.5 %)	13 (46.4 %)	33 (44.6 %)
No need to change anything	2 (4.3 %)	0 (0.0 %)	2 (2.7 %)
Total	46 (100.0 %)	28 (100.0 %)	74 (100.0 %)

Table 8: Recommendations to enhance attractiveness – teaching methods

Respondents would welcome the use of more practical methods, such as methods that lead to acquiring skills (demonstration and observation, instruction, manipulation, laboratory work, experiments) and activation methods such as heuristic, discussion, stage and didactic games. In this case, the dependence between the UPV and UOP students´ responses has not been proven (the Pearson's coefficient of contingency is 0.28). H_0 about the independence of the variables has not been rejected. That means, no dependence exists between whether the respondents study the field of UPV or UOP.

Recommendation	UPV	UOP	Total
Better equipped classrooms	30 (58.8 %)	10 (41.7 %)	40 (53.3 %)
Better equipment for practical lessons	7 (13.7 %)	7 (29.2 %)	14 (18.7 %)
New textbooks, materials	6 (11.8 %)	5 (20.8 %)	11 (14.7 %)
No need to change anything	8 (15.7 %)	2 (8.3 %)	10 (13.3 %)
Total	51 (100.0 %)	24 (100.0 %)	75 (100.0 %)

Table 9: Recommendations to enhance attractiveness – teaching conditions

Respondents believe that it would be helpful if classrooms were better equipped (they most often mentioned equipment for interactive teaching) and if schools had more equipment for practical lessons such as well-equipped specialized facilities (laboratories, workshops, school management, training plots, or contracts with companies for practical lessons). In this case, the dependence between the UPV and UOP students´ responses has not been proven (the Pearson's coefficient of contingency is 0.24). Therefore, H_0 about the independence of the variables is not rejected and there does not exist any dependence between whether the respondents study the field of UPV or UOP.

Recommendation	UPV	UOP	Total
Connect lessons and practice	33 (62.3 %)	15 (55.6 %)	48 (60.0 %)
Continuous education	17 (32.1 %)	2 (7.4 %)	19 (23.8 %)
Organize excursions, internships	0 (0.0 %)	5 (18.5 %)	5 (6.2 %)
Use specialists from practice	0 (0.0 %)	5 (18.5 %)	5 (6.2 %)
No need to change anything	3 (5.6 %)	0 (0.0 %)	3 (3.8 %)
Total	53 (100.0 %)	27 (100.0 %)	80 (100.0 %)

Table 10: Recommendations to enhance attractiveness – work of teachers as educators

According to the recommendations of the respondents, teachers as educators should be more focused on interconnection of classes with practice. This is in accordance with other relevant suggestions – to organize more practical excursions, field trips and internships, and continuous education. The relationship between the UPV and UOP students´ responses can not be confirmed (the Pearson's coefficient of contingency is 0.49). That means, H_0 about the independence of the variables is not rejected and there is no relationship whether the respondents study the field of UPV or UOP.

Recommendation	UPV	UOP	Total
Out-of-school activities (trips)	27 (62.8 %)	7 (33.3 %)	34 (53.1 %)
Organize excursions	7 (16.3 %)	4 (19.1 %)	11 (17.2 %)
Better motivation of students	6 (13.9 %)	5 (23.8 %)	11 (17.2 %)
Other	3 (7.0 %)	5 (23.8 %)	8 (12.5 %)
Total	43 (100.0 %)	21 (100.0 %)	64 (100.0 %)

Table 11: Recommendations to enhance attractiveness – work of teachers as instructors

At the level of higher secondary education, teachers are also instructors, which, according to the respondents, means that they should take interest in their students also outside classes by organizing out-of-school activities and field trips. There was also an opinion that teachers should better motivate students and improve communication with them. In this case, the dependence between the UPV and UOP students´ responses has not been proven (the Pearson's coefficient of contingency is 0.30). Therefore, H_0 about the independence of the variables has not been rejected and there exists no dependence between whether the respondents study the field of UPV or UOP.

A more synthesizing perspective can be achieved by comparing the results in Tables 7-11. Most recommendations on how to contribute to enhance the attractiveness of SZeŠ concern teachers' work as educators. Fewest recommendations were then recorded also in personnel, though in this case it concerned work of teachers as instructors. Regarding the areas focused on the course of lessons, or their content, methods and equipment, the number of suggestions is even. In all the observed areas, relatively more recommendations were given by UOP students. In particular, this concerns recommendations about innovative content of lessons and the active participation of teachers in connecting lessons to practice. This is probably also linked to frequent recommendations concerning better equipment in workshops, while on the other hand UPV students put relatively more focus on the need to improve equipment in classrooms. It is also interesting to take note of the results of comparing the two subsamples with respect to their recommendations concerning increasing students' motivation. UOP students directed their recommendations relatively more often to the teaching process and the role of teachers as educators while UPV students were more likely to make a link between motivation and joint participation of teachers and students in out-of-school activities (they were more susceptible to the community aspect of education).

Taking into account above mentioned results, it is worth to note that appropriate education, motivation and enthusiasm of teachers will be needed to achieve desired improvements. For this reason, extension education offered to teachers at secondary schools plays an important role. 'Post-secondary agricultural education programs should examine their role in providing researched-based professional development events that reengage teachers in the profession and influence implementation of work-life balance strategies' (Crutchfield, Ritz and Burris, 2013: 10). Some authors also note that persistent stereotypes concerning teachers´ motivation provide negative images that do little to attract and retain teachers (Watt and Richardson, 2012). This just confirms that an attractiveness of SZeŠ cannot be enhanced without an accent on quality teaching staff. Enabling teacher to continue to grow, learn and be excited about their work depends on both ongoing high-quality learning opportunities and career opportunities that enable them to share their expertise in a variety of ways (Darling-Hammond, 2017).

Attitudes and suggestions for realization of lifelong leasing at SzeŠ

On a 7-point scale (1 = very important, 7 = totally unimportant), respondents assessed whether SZeŠ should be involved in lifelong learning, which is gaining momentum.

Indicator	UPV	UOP	Total
Mean	2.5	2.3	2.4
Median	2.2	2.5	2.3

Table 12: The role of SZeŠ in organization of lifelong learning

Respondents' answers make it clear that the prevailing opinion is that lifelong learning is of importance. No differences were observed among the studied subsamples.

Activities	UPV	UOP	Total
Presentation of new trends	18 (27.7 %)	1 (4.0 %)	19 (21.1 %)
Organizing visits to farms	8 (12.3 %)	9 (36.0 %)	17 (18.9 %)
Offering part-time study programmes	10 (15.4 %)	3 (12.0 %)	13 (14.5 %)
Passing findings from practice	12 (18.4 %)	0 (0.0 %)	12 (13.3 %)
Courses of farming and breeding of animals	6 (9.2 %)	4 (16.0 %)	10 (11.1 %)
Presentation of environmental topics	5 (7.7 %)	2 (8.0 %)	7 (7.8 %)
Organization of foreign stays, courses	2 (3.1 %)	3 (12.0 %)	5 (5.6 %)
Extending qualification, driving lessons	4 (6.2 %)	0 (0.0 %)	4 (4.4 %)
Other	0 (0.0 %)	3 (12.0 %)	3 (3.3 %)
Total	65 (100.0 %)	25 (100.0 %)	90 (100.0 %)

Table 13: Possible activities at SZeŠ in the framework of lifelong learning

In the context of lifelong learning, respondents most often recommend that SZeŠ should present new trends in agriculture and food industry. It is interesting to note that this topic is particularly emphasized by UPV students (while the introduction of the same topics into standard secondary education is emphasized by UOP students). Other possible activities in the order as given in Table 13 are usually emphasized either by one or the other group of students. Also in

this case, no relationship between the UPV and UOP students´ responses was proven (the Pearson's coefficient of contingency is 0.49). Therefore, H_0 about the independence of the variables is not rejected. There exists no relation between whether the respondents study the field of UPV or UOP.

Activities	UPV	UOP	Total
Agricultural enterprises, farms	32 (47.8 %)	15 (48.4 %)	47 (47.9 %)
Environmentalist and other relevant NGOs	16 (23.9 %)	8 (25.8 %)	24 (24.5 %)
Institutions (Ministry of Agriculture, research institutes)	6 (8.9 %)	7 (22.6 %)	13 (13.3 %)
Local organizations	9 (13.4 %)	1 (3.2 %)	10 (10.2 %)
Other secondary schools	4 (6.0 %)	0 (0.0 %)	4 (4.1 %)
Total	67 (100.0 %)	31 (100.0 %)	98 (100.0 %)

Table 14: Possible cooperation for SZeŠ in the framework of lifelong leasing.

Respondents see a possibility in SZeŠ cooperation with local agricultural enterprises, family farms and environmental or other relevant NGOs (they often mentioned Greenpeace), with no difference between UPV students and UOP students. They further mentioned possible cooperation with the Ministry of Agriculture and research institutes, a possibility emphasized by UOP students, while UPV students saw more possibilities in cooperating with local organizations. It may be of interest that the least mentioned option was a cooperation with other schools. In this case, the dependence between the UPV and UOP students´ responses has not been proven (the Pearson's coefficient of contingency is 0.26). H_0 about the independence of the variables is not rejected and there exists no dependence between whether the respondents study the field of UPV or UOP.

It is evident that modern and professional training within lifelong learning is desired. However, modern and professional adult training must be based on modern methods improving organizational and individual performance creative ability and motivating staff (Dimitrescu, Sârbu and Lacroix, 2015).

Attitudes and suggestions concerning SZeŠ as community centres

On a 7-point scale (1 = very important, 7 = totally unimportant), respondents assessed whether SZeŠ can serve as community centers.

Indicator	UPV	UOP	Total
Mean	1.8	1.7	1.7
Median	2.0	2.0	2.0

Table 15: SZeŠ as community centres

Students in both subsamples support the claim that SZeS should take over the role of community centres (mean 1.7; median 2.0). Similar findings are reached by Husák and Hudečková (2016), who accent an importance to determine a main actor to cooperate with local actors and coordinate all participants in education in local municipalities.

Activities	UPV	UOP	Total
Organizing courses linked to nature, agriculture	29 (41.4 %)	16 (48.5 %)	45 (43.6 %)
Sports and cultural events at the school premises	29 (41.4 %)	12 (36.4 %)	41 (39.8 %)
Working in the garden, weekend workshops	2 (2.9 %)	3 (9.1 %)	5 (4.9 %)
Organizing camps, trips	4 (5.7 %)	0 (0.0 %)	4 (3.9 %)
Organizing farmers' markets	3 (4.3 %)	0 (0.0 %)	3 (2.9 %)
Other	3 (4.3 %)	2 (6.0 %)	5 (4.9 %)
Total	70 (100.0 %)	33 (100.0 %)	103 (100.0 %)

Table 16: Possible activities for SZeŠ as community centres

Suggestions for possible SZeŠ activities as community centres often included the idea that schools could act as organizers of courses related to the particular field of study, which was emphasized by UOP students, while UPV students more often hinted at the possibility of providing space for various sports and cultural activities for the public, which are activities not related to the school's specialization. Also in case of evaluation of new roles discussed and the co-operation of SZeŠ with other types of organizations, UPV students are considerably more clueless in all three of the observed areas. When compared to UOP students, the smallest difference was observed in the area for which the highest support was expressed, i.e. adopting an active role on the part of SZeŠ in providing lifelong learning. In this case, the dependence between the UPV and UOP students´ responses has not been proven (the Pearson's coefficient of contingency is 0.25). Therefore, the hypothesis H_0 about the independence of the variables has not been rejected, meaning that no dependence exists between whether the respondents study the field of UPV or UOP.

Comparison of "I don't know" answers

Activities which are seen as having a potential to increase the attractiveness of SZeŠ are ordered in the table from the highest to the lowest level of respondents' cluelessness.

Recommendation	UPV	UOP	Total
Work of teachers as instructors	61 (58.7 %)	16 (43.2 %)	77 (54.6 %)
Teaching methods	58 (55.8 %)	9 (24.3 %)	67 (47.5 %)
Conditions for education	53 (51.0 %)	13 (35.1 %)	66 (46.8 %)
Content of lessons	54 (51.9 %)	11 (29.7 %)	65 (46.1 %)
Work of teachers as educators	51 (49.0 %)	10 (27.0 %)	61 (43.3 %)

Table 17: Comparison of the frequency of neutral answers in recommendations to enhance attractiveness of agricultural high schools

UPV students showed an above-average rate in almost all areas of recommendation. UOP students are approaching such a level of cluelessness only in the first group of activities included in the table and they are far better informed when it comes to the other four groups. The difference is evident especially in teaching methods. In this case, the dependence between the UPV and UOP students´ responses is not proven if the level of significance was set 0.05 (Pearson's coefficient of contingency is 0.07). However, setting the level of significance at 0.1 would lead to a conclusion that a relationship would have been proven.

Possible activities for SZEŠ	UPV	UOP	Total
In the framework of lifelong learning	39 (37.5 %)	12 (32.4 %)	51 (36.2 %)
In cooperation with other organizations	37 (35.6 %)	6 (16.2 %)	43 (30.5 %)
As community centres	34 (32.7 %)	4 (10.8 %)	38 (27.0 %)

Table 18: Comparison of the frequency of neutral answers concerning possible activities or SZeŠ in the framework of lifelong learning

In the table, groups of new roles that SZeŠ could take on are once again ordered from the highest to the lowest level of cluelessness. Also in case of evaluation of new roles discussed and the co-operation of SZeŠ with other types of organizations, UPV students are considerably more clueless in all three of the observed areas. When compared to UOP students, the smallest difference was observed in the area for which the highest support was expressed, i.e. adopting an active role on the part of SZeŠ in providing lifelong learning. In this case, the dependence between the UPV and UOP students´ responses has not been proven again (the Pearson's coefficient of contingency is 0.15). Therefore, H_0 about the independence of the variables is not rejected and there can be concluded that no dependence exists between whether the respondents study the field of UPV or UOP.

DISCUSSION

The results make evident that education and regional development issues have not always been coordinated sufficiently. This concerns also the development of secondary education, including agricultural secondary education, which has a specific importance from regional perspective. As mentioned above, many countries all over the world are facing similar problems and many authors are concerned with this issue (e.g. Dos-Santos and Mota, 2018; Watt and Richardson, 2012). Similar findings, that rural community centres are only partly in accordance with rural development activities, presented also Husák and Hádková (2015). The results of the survey presented in the article have therefore an ambition to contribute to this field of research taking into account specific conditions of the Czech secondary agricultural education system.

The results of the survey also detected recommendations and ideas, which have a potential to enhance an attractiveness of secondary education in the Czech Republic. It is evident that the respondents would welcome greater interconnection of specific subjects with practice (greater inclusion of practical part or training into classes). The survey also shows that topics related to nature and its management as an environment where people live (agriculture oriented towards careful handling of natural resources, production of healthy food, floristry, fishkeeping, zoo therapy, activities related to keeping pets, etc.) are desired. Processing these topics should be more oriented towards the use of practical and activation methods. It is possible to conclude that such changes in current educational system would require building a partnership of secondary schools with representatives of municipalities, business and other relevant organizations. Survey result make also clear that the lifelong learning is perceived as very important for secondary agricultural schools as well as their role of community centres. This is becoming a challenge for all relevant actors in local communities. The authors are identified with the statement of Harkavy and Blank (2002: 52): that 'a community school is not just another program being imposed on a school. It embodies a way of thinking and acting that recognizes the historic central role of schools in our communities – and the power of working together for a common good. Educating our children, yes, but also strengthening our families and communities so that, in turn, they can help make our schools even stronger and our children even more successful.' The authors can confirm the findings of Husák and Hudečková (2017) that acknowledge that local networking, partnership and collaboration with the local municipality, parents and other local people are becoming more and more important.

The results indicate a possibility to improve the position of secondary schools, including agriculture ones. This improvement could consist in a replacement of the existing school funding system. Current funding is based on national norms, which determines the average student expenditure per unit (student). This financing method favors schools with a higher number of students. Schools thus accept students who do not have the prerequisites to study or the motivation, just to secure their funding. The change in funding should guarantee financial resources based on the number of classes taught by the curriculum, starting in January 2020. In such case, school directors will not have to persuade students with no interest in studies, which could increase the quality level of secondary schools. Similar needs have also been defined in Slovakia. Zaťková and Ambrozy (2019) point out that the Slovak education system is still substantially based on the Czechoslovak system as established by a fundamental reform from the 1970s. Changes in teaching methods and introduction of new topics will be better implemented in such schools where students are highly motivated, with a real interest in education. All the above-mentioned problems have one common denominator. To implement recommended ideas and changes resulting from the research will require an involvement of both local and national (respective European) level. At the local level, closer links and cooperation of schools with local actors will be a necessary condition to enhance attractiveness and quality of agricultural education, however legal conditions

and support given by national authorities is no less important. Therefore, an incorporation of educational issues into regional policy aims can become an important factor how to create environment suitable for offering quality and attractive agricultural education which, on the other hand, will contribute to economic, social and environmental sustainability of rural agricultural areas.

CONCLUSION

With regard to provided research and discussion, there can be concluded that education and regional development issues have not always been coordinated sufficiently. The current state will therefore require better and more coordinated approaches. The results of the survey also detected some recommendations and ideas, like greater interconnection of specific teaching subject with practice or closer cooperation of actors at local level, which have a potential to enhance an attractiveness of secondary education in the Czech Republic. A possibility to improve the position of secondary schools, including agriculture ones, could consist in a replacement of the existing school funding system to allow schools to adapt more easily to new challenges. An overall conclusion points out that an implementation of recommended ideas and changes resulting from the research will require an involvement of both local and national (respective European) level.

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