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Papers are published in English. A paper may comprise an empirical study using an acceptable research strategy, such as survey, case study, experiment, archival analysis, etc. It may contain a theoretical study aimed at advancing current theory or adapting theory to local conditions or it may arise from theoretical studies aimed at reviewing and/or synthesizing existing theory. Concepts and underlying principles should be emphasized, with enough background information to orient any reader who is not a specialist in the particular subject area.

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The paper. The paper is carefully formatted according to the template of the journal (see bellow). Special attention is paid to the exact application of the Harvard referencing convention to both continuous citations and list of references. If an electronic source has the DOI number assigned, also it will be provided in the list of references. Manuscripts are submitted via the editorial system in the DOC.

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Tables, graphs and illustrations should be drawn using a suitable drawing package. Colour may be used. Place all diagrams and tables where you wish them to appear in the paper. Ensure your diagrams fit within the margins and are resizable without distortion.

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Following Editorial recommendation, papers are submitted to a double-blind peer review process before publication. Commentary by reviewers will be summarized and sent by email to authors, who can choose to revise their papers in line with these remarks. Re-submitted papers should be accompanied by the description of the changes and other responses to reviewers' comments (see above), so that the desk-editor can easily see where changes have been made.

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On June 2–3, 2022, the 19th International Conference on Efficiency and Responsibility in Education (ERIE 2022) took place at the Faculty of Economics and Management, Czech University of Life Sciences Prague in the Czech Republic. After two long years that were affected by the COVID-19 pandemic, the ERIE 2022 conference had finally the on-site form. This year, we were more than pleased to welcome two keynote speakers. First, Dr. Irem Comoglu, an Associate Professor at the Faculty of Education, Dokuz Eylül University in Turkey, talked about empowering teachers through research. Second, Dr. Petr Soukup, the director of the Institute of Sociological Studies at the Faculty of Social Sciences, Charles University in the Czech Republic, conversed about the effective university education in the post-covid era. We are glad that the conference again attracted participants from various countries worldwide. The preparation for the 20th ERIE conference has already begun and the first call will be shared in upcoming months on our social media.

Further, we are also pleased to share the latest evaluation of the ERIES Journal in the annual Scimago Journal & Country Rank. ERIES Journal has been ranked in the Q3 in the Education category again with SJR of .251 (improvement of +23%). We are pleased that all the journal indicators have improved since the last-year evaluation: Total cites (+52.8%), External cites per document (+32.4%), and Citations per document (+16.1%). This result indicates that the established editorial policy of the journal is of high quality and the published content attracts a greater global scientific audience every year.

In the second issue of the ERIES Journal (Vol. 15, No. 2), we would like to present six articles related to learning trends in higher education, students' learning motivation, use of technologies in education, future teachers' competences, and the inclusive education.

The first article "Factors of Quality Assessment in Higher Education and Its Impact on Business Students' Development and Interest in University Education" by Lucie Depoo aims to identify factors of the education quality which impact students´ interest in attending lessons and courses. For this purpose, the author collected 1,607 responses using the computer-assisted paper interviewing and the computer-assisted web interviewing methods. The results show a clear link between students' interest in lessons and courses and the quality of human resource development. More precisely, the analysis revealed four factors determining the quality of human development: practically oriented lessons, open and discussing teachers, subject extent and difficulty, and newcomers. Therefore, the article indicates that the need for the practically oriented education is rising, and students expect such education during their university education.

The second article "Relationship Between Student Perceptions of a Constructivist Learning Environment, and their Motivational Beliefs and Self-Regulation of Effort" by Burcu Senler determines the gender-related differences in students' perceptions of a constructivist learning environment, their motivational beliefs, and self-regulation of effort in a science lesson. Moreover, the research explores the relationship between these concepts. The analysed sample consists of 489 students from five public middle schools in a small city in Turkey. According to the analysis, the middle school students' perceptions of the constructivist learning environment are significantly related to their motivational beliefs and self-regulation of effort. That is why ensuring the dialogue-based relationship between teacher-student and student-student, presenting teacher's support, and encouraging collaborative learning could enhance students' motivation and self-regulation of effort in science.

The third article "Students' Perception of Employing Social Media in the Educational Process in the Light of Education 4.0 Requirements" by Nouwar Al-Hamad, Husni Salem and Faruq Al-Omari investigates students' perception of social media networks integration into the educational process. The authors analysed responses from 762 students at seven universities in the Northern region of Jordan. The results indicate that 82.41% of students show constructive attitudes toward integrating social media into the educational process. Furthermore, the results also reveal a significant relationship between use behaviour and behavioural intentions, as well as a significant relationship between use behaviour and facilitating conditions. The authors recommend that the university leaders incorporate the latest technological advents and tools into the educational process.

The fourth article "Internet Addiction in University Students – Czech study" by Eva Milková, Martin Kaliba and Petra Ambrozova observed the existing risk of the Internet addiction for undergraduate students at Czech universities. The data were collected in the years just before the Covid-19 pandemic (between October 2019 and March 2020), and 3,366 students (2,151 females and 1,215 males) participated in the questionnaire survey. The analysis based on the Revised Chen Internet Addiction Scale indicates that 6% of the addicted within the research sample in case of applying the 63/64 cut-off point, and 3% of the addicted in case of applying the 67/68 cut-off point. What is more, the research proved a significantly higher risk in males than in females,

a significantly higher risk in the full-time students than in the part-time students, as well as a higher risk to the Internet addiction of the younger students.

The fifth article "Perception of the students of the Master in Teacher Training of the University of La Laguna on training in competences for educational guidance and the tutorial function" by David Pérez-Jorge, Andrea Delgado-Castro, Miriam Catalina González-Afonso and Eva Ariño-Mateo aims to explore the knowledge that the students of the Master's Degree in Teaching at the University of La Laguna have about the functions of educational guidance and their role as teachers and tutors. The studied sample consists of 79 students (44 females, 31 males and 4 students with another gender) with various specialities. The results show that students consider that the Master's program does not include sufficient training with respect to their tutoring and mentoring functions. That is why, it is necessary to improve the awareness about the Guidance Department at the university and its functions in the educational centre to strengthen the collaboration.

Finally, the sixth article "A Review Study of Research Articles on the Barriers to Inclusive Education in Primary Schools" by Martina Kurowski, Michal Černý and František Trapl presents a review of research studies related to the barriers to inclusive education at the primary schools. For this purpose, the authors investigated 27 expert articles selected from the Web of Science and Scopus databases. The analysis indicates a general concurrence that inclusion is both supported in legislation and teachers perceive it as something they should engage in. At the same time, however, schools and teachers do not have the support, education, competencies, and other tools to institute the inclusive education effectively.

We would like to thank all reviewers who contributed to this second issue of 2022, as well as we would also like to thank all authors who have submitted their manuscripts to ERIES Journal. We hope that all our readers will find this issue interesting, and we also hope that ERIES Journal will contribute with new insights, research methods and analyses to the field of efficiency and responsibility in education as it has contributed so far.

Sincerely

Martin Flégl
Executive Editor
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CONTENT

Full research paper

FACTORS OF QUALITY ASSESSMENT IN HIGHER EDUCATION AND ITS IMPACT ON BUSINESS STUDENTS' DEVELOPMENT AND INTEREST IN UNIVERSITY EDUCATION

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ABSTRACT

Human resource development at universities is one of the crucial aspects that forms an innovative and growing society. Therefore, it is crucial to continuously manage and develop factors of quality evaluation process in all universities to develop also human resources for labor market. Therefore, the aim of this paper is to identify factors of education quality which impact students´ interest in attending lessons and courses. Data were collected by students' questionnaire at case business university. Two dimensional statistical methods were used to evaluate the results. Totally, 1,607 students were questioned. The outputs show link towards students' interest in lessons and courses based on the quality of human resource development. There were four factors determining quality of human development found: practically oriented lessons; open and discussing teachers; subject extent and difficulty; and newcomers. The limitations of this study may be seen in the collection of data based on self-reports of students only and may therefore be subject to common-method bias. To minimize this limitation, the survey was assuring students that there was no right or wrong answer and their contribution towards higher quality was highly appreciated.

KEYWORDS

Assurance, education, quality evaluation, interest in university studies, teaching quality, university

HOW TO CITE

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Highlights

- *The result of this study is that the quality of education process does affect students' interest in lessons and courses.*
- *Students attend mostly subjects which were evaluated as the best and were connected to practice.*
- *Significant dependencies formed factors affecting students´ interest in lessons and courses and attendance in courses.*
- *The article formulates the impact of the quality of lectures, teachers and lessons on students' interest and attendance.*

INTRODUCTION

The importance of improving the quality level of higher education is stressed by Deveci (2015), Leonnard (2021), Šnýdrová et al. (2021) and many others, which state that assessment of lectures and seminars by students is nowadays crucial for the management of universities. Surveys by He and Hutson (2016) state that the first function which is most important in the teaching process at this time is students' initiation and the initiation of academic staff to interconnect seminars and lectures with practice. Heffernan et al. (2016) stress that students also want to succeed in competition in the labor market, and similarly, universities want to perform best in the global competition in high education.

The increased need for social accountability requires leaders of universities to constantly improve quality and promote transparency in order to safeguard public interest and confidence in quality assurance standards and factors (Garwe, 2014). Standards provide a theoretical framework ensuring academic quality as a complex, mission-driven relationship of systems and processes effectively linked to provide constant

improvement and positive results. Measurement, analysis, and knowledge management form a composite of results from student outcomes, customer outcomes, and faculty outcomes. Results serve as information for continuous improvement to advance academic quality (ACBSP, 2020). Similarly, IACBE (2019) determines academic quality with adequate quantitative and qualitative levels of human, financial, and physical resources as important factors. The overall quality of education also depends on the education processes used by the academic business unit to convert those resources to outcomes. These include processes such as teaching and other faculty interactions with students, faculty development and scholarly activities, curricular innovation and strategic planning.

The urgency of a quality-ensuring process in higher education is increasing with the number of persons involved in the process of education at universities with regards to demographic trends, and, especially now facing the COVID-19 closures, crisis and necessity to move to online or distance form together with the same or higher level of quality. Therefore, it is clear that universities are currently located in a highly competitive environment. In order to attract the interest of customers (university students, university graduates, employers, contracting research and development projects, representatives of practice), these services have to be of an outstanding quality. Therefore, the presented article deals with the evaluation of education quality provided by students and teachers at the selected university and its impact on students´ interest in lessons and courses. The main research questions examined may be expressed as follows:

- Is it possible to define factors affecting student interest in lessons and courses?
- Does student interest in lessons and courses relate with the quality of teaching-learning process?

Theoretical Background

The assessment of the quality of educational services is according to Mazais, Lapiņa and Liepiņa (2012) essential for providing feedback on the effectiveness of educational plans and for motivation to make changes in individual processes of universities and colleges. One of the topical issues that significantly complicates maintaining a certain consistency in the quality of educational services is the rapidly changing environment. Educational institutions should respond adequately to those changes by adapting their teaching-learning processes and their activities as a whole. Therefore, universities should put in place mechanisms to enable their study programs to be evaluated on an ongoing basis (Dufour, 2015).

There are several aspects to be observed in the assessment of the content of the study. For example, Simic, Stimac and Barilovic (2019) used in their study aspects such as organization of the study, the quality of the study program, usefulness of the information obtained, study program as a source of personal development, and quality of services provided by both academic and non-academic staff, competencies of staff and faculty, accessibility of sources etc.

A somewhat different view of the subject is seen by Hossain, Hossain and Chowdhury (2018), who in their research conducted at a private college found that perceived value is mostly affected by factors such as curriculum quality, teaching competence, service facility and also service delivery. But students' perceived satisfaction depends mostly on service facility.

Evaluation of quality assurance by students was also conducted by Ashraf, Ibrahim and Joarder (2009). Authors were measuring numerous of areas. In the area of faculty credentials, the following factors were found as crucial: (1) faculty's academic background, (2) teaching experience, (3) updated course content, (4) communication skills and least but not last (5) fair treatments to students. Moreover, the authors focused on areas such as classroom facilities, academic calendar, campus facility, research facility, cost of education and quality education in general.

Overall, the teacher is usually perceived as one of the key factors in student quality assessment, as he or she is the one who has the greatest impact on educational performance and the likelihood of successful completion of studies (Wachtel, 1998; Tram and Williamson, 2009; Flegl and Andrade Rosas, 2019).

The results of the research by Feldman (1996) showed that the most important concrete aspects are the preparation of the teacher and his/her organization of the course, the clarity and comprehensibility of the interpretation and course delivery, fulfillment of the course objectives and the outcome or impact of the course. Zeithaml (1988) argues that student satisfaction and motivation to graduate increase when the educational institution provides an environment that generally facilitates and simplifies learning.

The students' attitude towards school is, however, formed by the number of factors. These include, for example, peer opinions (Ryan, 2001), teachers' motivation influencing indirectly students' performance (Sammons et al., 2011), and academic responsibility (Merchant et al., 2012). One should also mention the implementation of practical examples and situations into the classroom, which increases students' professional competences (Colombo and Gómez Pradas, 2014), and is therefore often required and highly valued by them. Similarly, it is the case of interactivity of tuition and engagement of students in their education processes (Gámiz Sánchez, Montes Soldado and Pérez López, 2014; Kramarski and Michalsky, 2009). The key factor is also the efforts made by students themselves, which are often influenced by the above-mentioned classmates, attitudes of teachers and teaching materials or the learning environment (Hopland and Nyhus, 2016), which—due to the current considerable development of technologies—also includes e-learning, which provides students (and hence also teachers) with some flexibility in time and place (Alepis and Virvou, 2014).

Bryk and Schneider (2002) consider interpersonal relationships among students, teachers other school staff and, where applicable, other interest groups an essential part of the social school environment. One of the conditions for the existence of this link is, of course, also the participation of students in teaching. Studies investigating the relationship between students' interest and their study results have therefore been carried out for many years (see, for example, Devadoss and Foltz, 1996; Dolton, Marcenaro and Navarro, 2003, etc.). The conclusions of these research studies are unambiguous — attendance of lectures, seminars, etc., clearly provides the students with a number of

benefits (Stanca, 2006). Lindstadt (2005), McCluskey, Bynum and Patchin (2004) agree that the critical factors deciding on students' interest/attendance/non-attendance of classes include, in addition to those individual, family, or societal ones, factors related to the educational institution itself—its structure, rules, environment or employees. The former influences can hardly be affected by universities, and therefore emphasis must be put on the latter factor and monitoring student satisfaction in this area.

Research shows that students with a different general performance focus are coming to all levels of education (Trajkovik et al., 2018; Voronchenko, Vinogradova and Zherebtsova, 2014; Savva et al., 2017). In a college or university chosen by a student, each individual encounter new tasks, experiences and is exposed to regular evaluation of success in subjects. Students are always exposed to a comparison to others by teachers and fellow students. According to the study results, behavior, approach to study, everyone gets into the role of a successful, average or unsuccessful student at a college or university and this affects his/her inner motivation. However, according to research, students will not graduate successfully without motivation. It is necessary to realize that in order to achieve optimal performance of students, their level of internal motivation have to reach appropriate level corresponding to their competencies and individual personal characteristics (Zhdanko, 2018; Trajkovik et al., 2018). The motivation and results of the study are also related to the promotion of one's own self and how the student perceives himself/herself and how he/she feels in performance situations during lectures, exercises and other study duties. Based on the research results of Limanond et al. (2011); Khabibullina, Fakhrutdinova and Diuanova (2017); Ji, Tian and Dong (2015) state that the experience of success is an emotional experience, which is the essence of the motivation for further study performance and its effectiveness is weakened by the fear of failure.

MATERIALS AND METHODS

The article brings results of primary survey of students in selected case business university. The data were collected to evaluate today's trend in education, teaching and obtaining skills and knowledge by students in a Czech private university. A quantitative primary survey was used, investigating assessment of education, teaching and its quality by students. The number of students who participated at the survey was 1,607. All students were affiliated with one business case university from Czech Republic. Students were both at undergraduate and graduate level (bachelor and master students in business programs). Characteristics of students is shown in Sample subchapter. The data were collected from students who successfully passed their subject. All types of subjects were used for the analysis – compulsory and voluntary.

The questionnaires were collected using computer-assisted paper interviewing - CAPI and computer-assisted web interviewing – CAWI. Data were sorted, evaluated, and tested by statistical software SPSS. The data matrix was evaluated based on identification questions and secondly, statistical tests based on prepositions mentioned below were used. The structure and content of the survey was designed based on quality standards in higher education. The standards were used from European area (ESG, ENQA, EQAR) and American standards (AACSB, ACBSP). Also, quality-oriented questionnaire from other universities were used, i.e., eVALUate (Curtin University, 2015) and surveys presented by Remedios and Lieberman (2008), Ahmad and Aziz (2009), Tang et al. (2012), and Kifle and Alauddin (2016), and quality approaches mentioned in the literature review.

Sample

Students were questioned when they attended classes and evaluated each course they had attended. The structure of respondents was as follows:

- Gender of students: 629 (39.4%) male, 971 (60.6%) female; 7 answers were missing;
- Professional employment of students: 762 (47.9%) work in business, 829 (52.1%) do not work yet;
- Future orientation of students: 864 (55.4%) plan to work in business, 240 (15.4%) do not plan to work in business and the remaining ones do not have clear plan yet;
- Study grades: 951 (59.2%) undergraduate students and 656 (40.8%) graduate students;
- Forms of study: 743 (46.2%) full-time and 864 (53.8%) part-time;
- In total, the university had 1,864 students at the case study period.

Survey design

The survey was designed to complexly evaluate quality of teaching-learning process in studied university. There were the following areas investigated: teachers, subjects and lessons. This paper focuses on impact of quality on the attendance of students at lessons and courses. Multiple questions measured each area (lesson, subject and teacher). Students' expressions of offered statements in the survey were designed to offer several possible answers. The questions and answers were designed either as multiple-choice, or scales. Five-point sales were used, where 1 means strongly agree and 5 means strongly disagree. It was possible to use median value (value 3) to express neither agreement/satisfaction with a statement, nor disagreement/dissatisfaction. Use of scale could measure not only satisfaction or agreement, but also its level. Questionnaires contained scales, and also had open questions, where each student could fill his/her comments, recommendations or suggestions on the studied areas (courses, subjects and teachers). All comments collected from open questions were evaluated based on content analysis and constructive and reasonable comments were used to implementation in the education process improvements. For example, improvements in teachers´ skills, innovation in subjects, etc. Areas that were redesigned based on collected suggestions were firstly discussed with stakeholders (academic council, university management, employers, and quality assurance institutions) before they were implemented to ensure applicability and usefulness of the new direction. The higher number of collected responses and suggestions make available to orient on the most often mentioned suggestions and to filter out inconsistent notes. On the other hand, ale comments were evaluated and interpreted

separately, as those may contain important message or inspiration for further development.

As the design of the survey follows the international quality standards and main suggestions in the current theory, the results should be highly comparable and create the base for quality assurance and accreditation processes. The main limit of these questionnaires is that the statements are mostly limited by statements by the used scales. This may be compensated by open questions and the possibility to write any comment by students. Students were filling survey per each course they attended. Each student completed the survey at the last lesson of each course he/she was enrolled at. The survey was firstly used on several students as a pilot survey. Passed to all concerns and questions of students who were selected as pilot testers were addressed the survey was finalized. The pilot survey also made sure that the questions are understandable and measure the core of the research question.

To test the reliability of the survey Cronbach Alpha was used. The alpha coefficient for questionnaire items was 0.783. The result is considered satisfactory, showing that questions have relatively high internal consistency as coefficient of 0.70 or higher is considered "acceptable" in social sciences.

Operationalization of results

The collected data were processed and analyzed firstly by descriptive statistics. Furthermore, two-dimensional statistics using Pearson´s correlation coefficient was used. The results of the tests are presented at the significance level 0.05. All statistical tests and procedures were conducted based on Hebák, Malá and Hustopecký (2006). Interpretation of results followed the suggestions of the same author. The overall entry conditions of data to perform an analysis were evaluated based on procedures described by Hendl (2006). The main hypothesis in this paper is H0: The quality of education does not affect students' attendance at lessons.

RESULTS

Hypotheses related to the variables of each analyzed area (subject, lesson and teacher) were tested. Table 1 shows statistically significant results. The variables were chosen for the analysis, which may affect students´ final perception of education quality level. One may see that students perceive subjects as beneficial when the subjects are oriented or focused on practice and practicing. The analysis revealed a very strong relation between these variables. Students appreciate practically oriented education and the possibility to obtain information and case studies from practice. Highly evaluated are also guests and teachers who also work in company management and give lectures and seminars. Students also evaluated best the possibility to be part of the education process using presentation of their project work or other possibilities to discuss with the teacher and other students and colleagues. The revealed correlation is very strong ($p < 0.001$).

Another important result of the correlation analysis is proven relation between filled students' expectations when the subject is adequately positioned in the study plan and program. Students expect the subjects to be in accordance with their study plans and their programs. This is important for their satisfaction with the education process.

Hypothesis	Correlation coefficient
Subject is beneficial and valuable - relates to practice	0.895
Subject is adequately placed in study program - filled expectations	0.527
Explanation is understandable – the pace is suitable	0.712
Explanation is understandable - style of explanation is adequate	0.799
Lectures are adequate - style of explanation is adequate	0.547
Teacher cares about students understanding - opportunity to express opinion	0.564
Teacher cares about students understanding - adequately explains	0.669
Teacher pays attention on practicing - able to attract	0.555
Teacher pays attention on practicing - motivates to learn	0.620
Teacher pays attention on practicing - uses modern teaching techniques	0.016

Table 1: Hypotheses related to subjects (Source: Own processing)

Students perceive lessons as understandable when the pace and style of explanation are adequate. Those two aspects have a significant impact on students' understanding. Based on the results presented above, it is necessary that teacher focuses on the student and study group to reach study goals and learning outcomes. This is also confirmed with the third significant correlation, which shows relation between appropriate explanation and perception of lectures as adequate.

The analysis revealed mediumstrong correlations between carefulness of teacher of students understanding and opportunity to express opinion and with teachers' explanation. The focus is placed on the student-oriented education. Teachers receive the best evaluation when they care about students' understanding and discuss with the students. Students appreciate being part of the discussion and being able to express and discuss their opinions to unite their thoughts.

Similarly, important is also orientation on practice. The analysis revealed three strong correlations in this area. Focus on practicing correlates with the teacher's ability to attract students and ability to motivate them. Practicing statistically significantly attracts students and motivates them in the education process. Teachers should place emphasis on this. On the other hand, the usage of modern teaching techniques is not dependent on practicing; the analysis shows there is no relation. The attention of students can be attracted by any teaching techniques, but students are attracted by discussion and practical application of studied theory.

The results of correlation analyses show the main focus areas of students. They are oriented on practice and practical orientation and explanation of studied subjects. The practically oriented education attracts and motivates students. Additionally, the students prefer student-centred education and obtains the best results in student attention and participation in the education process. These focus areas mainly impact students' perception of education quality.

Impact of the quality evaluation level on students' interest in lessons and courses

The results showing student interest in lessons and courses are summarized in Table 2. The subjects evaluated by students were divided into the main study areas. Table 2 shows the number of subjects evaluated, the number of respondent students per each area and in total, and average values of student interest in lessons and courses and their average evaluation values of subjects, lessons and teachers in the studied area. On average, each subject was attended by 23 students, but standard deviation is almost 25 students. That means that in some cases only one or two students attended the course.

Most of the students studied the area of Human Resources evaluate the courses as the best. On the other hand, the lowest number of students attended Marketing courses. There are fewer courses, yet the average number of students per class is the lowest.

	students	subjects		attendance	subject	lesson	teacher
Economics	244	7	AVG	34.86	2.17	1.73	1.84
			STD	46.30	0.28	0.48	0.26
Business Economics	275	13	AVG	21.15	1.73	1.35	1.50
			STD	20.07	0.15	0.19	0.24
Human Resources	452	17	AVG	26.59	1.74	1.27	1.42
			STD	30.28	0.22	0.18	0.27
Management	336	15	AVG	22.27	1.72	1.46	1.60
			STD	19.95	0.22	0.33	0.30
Marketing	145	12	AVG	12.08	1.78	1.44	1.59
			STD	7.61	0.26	0.33	0.27
Total	1607	72	AVG	22.61	1.81	1.44	1.57
			STD	24.86	0.29	0.33	0.30

Table 2: Evaluation and interest of study areas (Source: Own processing)

The largest number of students per lesson is in the area of Economics. Students have to pass the main microeconomics and macroeconomic courses in the first year of their study and this impacts on high interest in lessons and courses. One may notice that students evaluate the subjects as the worst. But the lessons and teachers in the area of Economics are not evaluated as bad as the subjects. That indicates the way of teaching these unpopular subjects is acceptable by students, although they do not like the contents of these subjects.

The area of Business Economics shows average values in all studied criteria. Based on the results of focus group, Business Economics subjects are, compare to Economics, perceived as valuable and closely connected with practice. That is why students evaluate most of the studied areas positively, except for Economics. They perceive it as only theoretical.

The area of Management obtained quite satisfactory results. Students evaluated the subjects, teachers and lessons in this area as one of the best ones. It is also the second most studied area, with a total of 334 respondents – attending students – and 15 subjects per research period.

The impact of interest in lessons and courses on the evaluation of education process was also studied and tested by correlation analysis. In total, a subject and its content do not relate to student interest in lessons and courses. Correlations were found in areas of Human Resources, Marketing and medium-strong in Management. In these areas, students are attracted by the content of subjects and the content of the tuition has impact on their interest in lessons and courses.

On the other hand, lessons are almost always connected to attendance. The strongest correlation can be seen in Economics. Lessons in this area are very important for students, as they perceive the subjects quite demanding, and they need to attend the lessons and seminars. Also, other study areas correlate (usually medium correlations) with the lectures. An exception is the area of Business Economics, where no relations were found. Lessons in this area were evaluated as almost the best ones and practical.

Similar results are found in the relation between impacts of teacher on student's interest in lessons and courses (Table 3). One may state that the evaluation of teachers has impact on students' interest in lessons and courses mainly in Economics. On the other hand, again, interest in lessons and courses in Business Economics does not depend on teacher.

In summary, lessons (practically oriented with practicing – factor 1) and teachers (open and discussing – factor 2) have impact on student interest in lessons and courses in the education process (lectures, seminars). The results also show that the more difficult the studied subject is, the more students attend (subject difficulty and broad content – factor 3; where students need help with understanding and self-study is not sufficient). Students appreciate the help of the teacher and the possibility to discuss, ask questions and communicate about problematic areas.

However, student interest in lessons and courses also depends on the year of study (beginners – factor 4). Students in the first year of their studies attend more often the studied subjects and lessons than in the following years. It is natural and is also caused by study success and promotion to higher grade. This

consequence is not valid in the area of Human Resources. These subjects are often attended by students in higher grades too. Students appreciated the focus on practice, and they are also interested in the content of those subjects.

Interest & Attendance	Subject	Lesson	Teacher
Total	0.193	0.376	0.272
Economics	0.156	0.902	0.648
Business Economics	0.172	0.082	0.051
Human Resources	0.270	0.397	0.354
Management	0.406	0.481	0.436
Marketing	0.247	0.535	0.270

Table 3: Impact of evaluation level on students´ interest in lessons and courses (Source: Own processing)

DISCUSSION

The results of Noroozi, Biemans and Mulder (2016) show that the students' feedback is important for the quality of the teaching process, and Jones et al. (2016) add that the teachers' feedback from the students (after seminars, lectures, from case studies etc.) is important too. In view of the achieved results, it is possible to agree with the research by Deveci (2015) that assessment of lectures and seminars by students is nowadays crucial for the management of universities. The results showed that practical orientation of the subjects is important for all students, as confirmed by the researchers He and Hutson (2016). Darwin (2016) says that student feedback-based evaluation plays a significant social role in framing perceptions of the quality of teaching in higher education. Yet its emergence is a relatively recent topic nowadays, having only been in widespread application since the mid-1980s. Feedback must always be provided straight after the lesson in the semester or trimester. Feedback is crucial tool for developing student understanding and awareness of learning outcomes and students' autonomy. Darwin (2016) adds that the early manifestations of student feedback-based evaluation came with newly emerging academic development units with a motive to enhance the quality of local teaching and to afford student retention, however, new motives for assailing student feedback evolved with the rapid growth in student numbers, the introduction of student fees and heightened levels of inter-institutional competition for students. According to Darwin (2016) we can state that the complex social origins of these competing motives for student feedback-based evaluation in higher education are very important for high education quality nowadays.

If we connect theory and practice and we state with Aminbeidokhti, Jamshidi and Mohammadi Hoseini (2014) that as the total quality management (TQM) is important in practice, it is equally important in higher education. TQM positively and meaningfully affects the organizational learning primarily and that organizational learning has a significant effect on the organizational innovation. All the universities are it the market with learning they should create a competitive advantage. This topic is discussed in high education field too.

It is possible to agree with the conclusions of Garwe (2014) and Ferro and D'Elia (2020) that universities now operate in a global and competitive environment and that quality education is the result of the quality of processes implementation and the quality of implementation processes is largely determined by the quality of management. Chui et al. (2016) and Khosravi et al. (2013) report that higher education institutions are currently facing significant changes due to the massive increase in the number and diversity of educational service providers, which deepens the competitive environment in the education market. Klein et al. (2019) adds that the organizational context and commitment, including structures, policies, processes, and leadership, influence individual trust decisions and the students' acceptance of analytical learning tools in the educational process at the university. Furthermore, their results have shown the importance of a comprehensive, inclusive, and well-communicated plan for implementing learning analytics tools for maximal student acceptance.

As ENQA (2005) defines, higher education institutions are responsible for the quality of their education and programs. This study investigates more from analysis of the basic standards; it is possible to compare it to the actual students´ interests (which also means focus on stakeholders and current market demands). The students´ interest in specific areas, subjects and courses affect their interest in lessons and courses and attendance. The paper found four factors affecting students' interest in lessons and courses: practically oriented lessons; open and discussing teachers; subject extent and difficulty; and newcomers. Development of a culture of quality and demonstration of its accountability are the most important areas (ENQA, 2005; AACSB, 2016) and it is also linked to first three factors affecting students' attendance in courses and lessons. Higher education institutions should be able to demonstrate their quality, diversity and innovation by focusing on areas described in the presented study.

Guilbault (2018), in the context of the increasing competitive environment in higher education, emphasizes the need for higher education institutions to develop and implement marketing concepts, basically in the same manner as in other sectors. Taking into account the results achieved in this article, it is possible to summarize that only universities that focus on identifying their students' preferences and needs and trying to understand what students expect from the university itself have the chance to succeed in today's highly competitive environment and maintain a high standard of quality, which is confirmed by researchers Fajčíková and Urbancová (2019).

The practical contribution of the article is the presentation of the results of a case study from a selected private business university. Although this is a case study, the results are obtained from a relatively large sample of respondents, and therefore this study can help to steer similarly oriented private universities. The evaluation process described above takes

place regularly at the presented private school and is in line with quality standards of ACBSP (2020).

The theoretical contribution of this article is the systemic formulation of the impact of quality of lectures, teachers and lessons on students' interest and attendance. The quality, therefore, influences the course of study and study results, completing education and later also employability in the labour market.

The practical contribution of this article is the application of the theoretical knowledge within the students at the surveyed university while research found the impact of quality on attendance and results of lessons and courses. The main reason and shift can be seen in the fact that the market with higher education is highly competitive because all schools are trying their best to attract as many students and candidates as possible. On the other hand, the current demography in most European countries is declining, which leads to even higher concurrence. Furthermore, all surveyed students evaluate focus on quality positively.

A limitation of the study is a narrow focus on one private university. However, the results are presented as a case study, and these findings may help other universities when implementing the process of evaluating quality of teaching, which is an increasingly discussed area. Furthermore, this article provides an insight into the importance of quality assurance, its monitoring and implementation of continuous improvement based on feedback loop.

Promising avenues for further research are areas measuring the impact of student preferences in quality on performance and learning outcomes together with quality of graduates and fulfillment of curricula. Additionally, revealed factors may be surveyed separately to validate their impact on the quality of teaching-learning process in higher educational institutions and further differences in approaches to learning process, development of human resources and its results.

CONCLUSIONS

It is possible to summarize that the quality of education process does affect students' interest in lessons and courses. The main hypothesis in this paper *H0: The quality of education does not affect students' attendance at lessons* was rejected. Students attended mostly subjects which were evaluated as the best and were connected to practice. Research outcomes confirmed statistically significant dependencies which formed the main factors affecting students´ interest in lessons and courses and attendance in courses. These factors are practically oriented lessons; open and discussing teachers; subject extent and difficulty, and newcomers. The first factor is lesson focus on practicing and practical case studies, connected with practical application. The second factor is a teacher's personality, openness and attention to students, discussions and opinion sharing have impact on student interest in lessons and courses. Third factor shows that the more difficult the studied subject is, the more the students attend. Fourth factor is the year of study. Students in the first year of their studies attend more often the studied subjects and lessons than in the following years. Contrary, the fourth factor is not applicable for practically oriented subjects. Such subjects are often attended by students in higher grades, where students appreciate focus on practice, and they are interested in the content of those subjects.

Based on the continuous research on the case university we may generalize the results, as they prove to replicate the same results for past years. The need for practical education is rising and students reply to this trend.

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Full research paper

RELATIONSHIP BETWEEN STUDENT PERCEPTIONS OF A CONSTRUCTIVIST LEARNING ENVIRONMENT, AND THEIR MOTIVATIONAL BELIEFS AND SELF-REGULATION OF EFFORT

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ABSTRACT

The aim of this study is twofold: first, to determine gender-related differences in students' perceptions of a constructivist learning environment, their motivational beliefs, and self-regulation of effort in a science lesson; secondly, to explore the relationship between these concepts. The correlational research was employed in this study. The sample consists of 489 students from five public middle schools in a small city in Turkey. The Constructivist Learning Environment Survey was utilized to assess students' perceptions of their classroom learning environment in constructivist-oriented ways. The Students' Adaptive Learning Engagement in Science survey was used to assess students' motivation and self-regulation of effort in their science learning. The relationships between students' perceptions of a constructivist learning environment and their motivational beliefs and self-regulation of effort were examined using canonical correlation analysis. According to the canonical analysis, middle school students' perceptions of a constructivist learning environment are significantly related to their motivational beliefs and self-regulation of effort. Implications of these findings were discussed.

KEYWORDS

Constructivist learning environment, middle school students, motivational beliefs, self-regulation of effort

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Highlights

- *Middle school students' perceptions of a constructivist learning environment, their motivational beliefs do not differ in terms of their gender.*
- *Middle school students' self-regulation of effort differs in terms of their gender.*
- *Middle school students' perceptions of a constructivist learning environment associates with their motivational beliefs.*
- *Middle school students' perceptions of a constructivist learning environment associates with self-regulation of effort.*

INTRODUCTION

The learning environment is an environment where learning occurs and consists of social, psychological, and pedagogical contexts that influence student achievement and students' attitudes (Fraser, 1998). In a constructivist learning environment, students use various tools and sources of information while achieving their guided learning goals, and they work together and support each other in this process (Wilson, 1996). The teacher acts as a coach and facilitator, guiding and directing students to achieve learning goals in this student-centered environment (Wilson, 1996). Students' experiences are considered important, and knowledge is structured through interaction and collaboration. The teacher acts as a guide, encouraging students to ask questions, produce their thoughts, and reach conclusions (Richardson, 1997). Teachers also help students create their own meaning by interacting and collaborating (Brooks and Brooks, 1999).
Considering that most learning occurs within the learning

environment, it is no surprise that this environment plays a vital role in student learning outcomes. The significance of the classroom learning environment has been recognized and progressively studied over the last 40 years. Students' perceptions are a crucial subject of investigation in relation to the learning environment and, indeed, many studies have indicated a relationship between students' perceptions of their classroom learning environment and their affective and cognitive outcomes (e.g., Deiso and Fraser, 2019; Medson, 2020; Ngah, Junid and Osman, 2019; Taub et al., 2020; Topolovčan and Matijević, 2017).

The literature also emphasizes the importance of the relationship between students' learning environment and their motivational beliefs (e.g., Cetin-Dindar, 2016; Korpershoek et al., 2019; Kulakow, 2020). The constructivist learning environment is said to increase students' motivation and enable them to control the learning process. For example, by giving students autonomy and responsibility, the constructivist learning environment develops adaptive motivational beliefs (Ames, 1992).

Among the crucial motivational beliefs associated with the learning process are beliefs in self-efficacy, task value and learning goals (Pintrich and Schunk, 2002). Self-efficacy is defined as the judgments of individuals about their ability to organize and execute what needs to be done to achieve their target performance (Bandura, 1986). Self-efficacy beliefs determine individuals' thoughts, emotions, motivation and behavior (Pajares, 1997) and, hence, their choice of task and the effort and persistence they apply towards that task (Pintrich and Schunk, 2002). In other words, because people take action based on the belief that they can succeed, those with high self-efficacy invest more time and effort and show greater persistence than those with low self-efficacy.

Task value and learning goals are reasons why people engage in a task (Zimmerman, 2000). Task value, a key component of the expectancy-value model of motivation, refers to the learner's perception of the learning task's value regarding its interest, utility, and costs (Eccles and Wigfield, 2002). Learners are more likely to spend effort on learning and understanding a given task if they are interested in it (Wolters and Rosenthal, 2000). Even if they are low in self-efficacy, they are more likely to participate in and continue activities they feel are valuable (Schunk and Zimmerman, 2007). Perceived value influences behavior since learners give less attention in activities that they do not value (Eccles and Wigfield, 2002). Conversely, learners who think it results in positive outcomes are more likely to attempt an activity, even if they lack the self-efficacy required to perform well.

Learning goals include learners' perceptions of the reasons for performing a learning task. Individuals with a learning-goal orientation focus on processes and strategies that can increase their competence (Schunk and Zimmerman, 2006). In particular, individuals with a learning goal orientation focus on meaningful learning, understanding, and specialization. Studies have shown that learning goals and task values directly affect achievement and are positively correlated with metacognitive strategies such as planning and organizing learning (Sungur, 2007).

Another factor that affects the learning process is self-regulation, which refers to how learners activate and retain cognition, behavior, and effect to achieve their goals. Self-regulation includes cognitive processing, metacognitive thinking, and motivational beliefs (Pintrich and Linnenbrink, 2000). Learners with self-regulation skills are cognitive, motivational, and behaviorally active in their learning, setting goals, using appropriate strategies and effort to achieve them, and evaluating their learning processes and outcomes (McCoach and Siegle, 2003). Similarly, effort regulation relates to the tendency, despite potential diversion, to maintain focus on and effort towards a goal (Corno, 1994), which explains why individuals with self-regulation skills are more successful in their learning than passive and teacher-dependent individuals (Risemberg and Zimmerman, 1992).

There has been limited research on the association between students' perceptions of the classroom learning environment and their self-efficacy beliefs (e.g., Alt, 2015; Partin and Haney, 2012), learning goals (e.g., Poondej and Lerdpornkulrat, 2016; Sungur and Gungoren, 2009), and self-regulation (e.g. Sungur and Gungoren, 2009; Talan and Gulsecen, 2018). In these studies, learning environment was found to be related to self-efficacy beliefs, mastery goals, and self-regulation. Additionally, these concepts have not been studied in the last 10 years as much as earlier. However, changes in everything from lifestyle to technology influence generations' characteristics. For instance, as primary and middle school students, Generation Z (i.e. Next Generation, Digital Natives, iGen), can use technology better than the previous generations and adapt it to every aspect of their lives. Generation Z prefers to observe before doing, work alone, applied learning, and interpersonal learning (Seemiller and Grace, 2017). Generation Z needs more interaction, reinforcement of concepts with videos and cooperative learning in their class (Swanzen, 2018). Thus, the Z generation might differ from the previous generation in terms of perceptions, and beliefs, so these concepts need to be studied again.

To address the gap in the literature, the following research questions were sought:

Research Question 1: Is there a significant difference in students' perception of a constructivist learning environment, their motivational beliefs, and self-regulation of effort in a science lesson in terms of their gender?

Research Question 2: Is there a relationship between students' perception of a constructivist learning environment, their motivational beliefs, and self-regulation of effort in a science lesson?

MATERIAL AND METHODS

Participants

Convenience sampling, which involves individuals who are available conveniently, was utilized in this study. All of the middle schools in Mentese-Mugla in Turkey were enrolled in this study. Totally 489 students (259 females, 228 males, 2 not specified; mean age for both gender: 12.9 years) from the schools participated in the study. All of the schools are public schools affiliated with the Ministry of Education, and thus all the classrooms have similar characteristics in terms

of class size, physical conditions, etc. Additionally, they all follow a standardized national curriculum. The university ethics committee approved the study, and the administrators of the participating schools and the parents of the participating students gave their informed consent.

Instruments

To explore the relationship between variables without any manipulation, correlational in other words associational research was employed in this study. Correlational research studies the possible relationships among two or more variables (Fraenkel, Wallen and Hyun, 2019).

Constructivist learning environment survey (CLES)

The Constructivist Learning Environment Survey (CLES) assesses student perceptions of the degree to which the classroom learning environment is constructivist-oriented. The original CLES was developed by Taylor and Fraser (1991). Johnson and McClure (2004) created a shortened and revised version, adapted into Turkish by Yilmaz-Tuzun, Cakiroglu and Boone (2006). The CLES consists of 5 scales - personal relevance, uncertainty, critical voice, shared control, and student negotiation - with a total of 20 items and a Likert-type response scale of one to five. Table 1 displays scale descriptions, sample items, and Cronbach's Alpha values.

Scale	Scale description	Sample item	Cronbach's Alpha shortened version*	Cronbach's Alpha Turkish version*	Cronbach's Alpha present study
Personal Relevance (PR)	Extent to which teachers relate science to students' out of school experiences	"In this science class, I learn about the world inside and outside of school."	.90	.79	.83
Uncertainty (U)	Extent to which opportunities are provided for students to experience scientific knowledge as arising from theory-dependent inquiry.	"In this science class I learn the views of science have changed over time."	.81	.74	.88
Critical Voice (CV)	Extent to which a social climate has been established in which students feel that it is beneficial to question the teacher's pedagogical plans and methods to express concerns about any impediments to their learning.	"In this science class, I safely question what or how I am being taught."	.88	.86	.85
Shared Control (SC)	Extent to which students are invited to share with the teacher control of the learning environment.	"In this science class, I help the teacher to plan what I am going to learn."	.76	.72	.89
Student Negotiation (SN)	Extent to which opportunities exist for students to explain and justify to other students their newly developing ideas.	"In this science class, I ask other students to explain their ideas."	.81	.78	.85

All scale descriptions are taken from Johnson and McClure (2004), and Taylor, Fraser and Fisher (1997)
**354 upper elementary, middle and high school students. Johnson and McClure (2004).*

Table 1: Constructivist Learning Environment Survey (CLES)

Students' adaptive learning engagement in science (SALES)

The Students' Adaptive Learning Engagement in Science (SALES) survey assesses student motivation and self-regulation of effort in science learning. The SALES was developed by Velayutham, Aldridge and Fraser (2011) and adapted into Turkish by Şenler (2014). The survey consists of 4 scales - learning goal orientation, task value, self-efficacy, and self-regulation of effort - with a total of 32 items and a Likert-type response scale of one to five. Table 2 presents scale descriptions, sample items, and Cronbach's Alpha values.

A reliability coefficient of.70 and above are considered reliable (Nunnally, 1978). As it is seen in Table 1 and Table 2 Cronbach's Alpha values of the present study are above .70 which indicates, the reliability of the scales.

Scales	Scale description	Sample item	Cronbach's Alpha shortened version*	Cronbach's Alpha Turkish version*	Cronbach's Alpha present study
Learning goal orientation (LG)	The degree to which the student perceives him/herself to be participating in a science classroom for the purpose of learning, understanding and mastering science concepts, as well as improving science skills.	"In this science class, it is important for me to learn the science content that is taught."	.91	.83	.88
Task value (TV)	The degree to which the student perceives the science learning tasks in terms of interest, importance and utility.	"In this science class, what I learn can be used in my daily life."	.92	.83	.84
Self-efficacy (SE)	The degree of confidence and beliefs that a student has in his/her own ability to successfully perform science-learning tasks.	"In this science class, even if the science work is hard, I can learn it."	.92	.86	.78
Self-regulation of effort (SR)	The degree to which the student controls and regulates his/her effort in science learning tasks.	"In this science class, even when tasks are uninteresting, I keep working."	.91	.85	.90

All scale descriptions are taken from Velayutham, Aldridge and Afari (2013:122)

Table 2: Students' Adaptive Learning Engagement in Science Scale (SALES)

Data analysis

To answer the first research question independent *t*-test was utilized for each variable. To answer the second research question canonical correlation analysis was performed. Canonical correlation analysis is a technique used to identify the degree of relationship between two sets of variables with two or more variables each (Tabachnick and Fidell, 2007). In this study, there are 2 instruments and thus 2 data sets; the CLES data set contains 5 variables, and the SALES data set contains 4 variables, so the maximum number of canonical variable pairs that can be formed is four. Moreover, because the number of observations in the data sets must be 20 times that of the total number of variables for the results of canonical correlation analysis to be interpreted correctly (Stevens, 2002), this study required a sample size of 180, as there are 9 variables in the data sets. Normality of distribution was determined based on Skewness and Kurtosis values. According to George and Mallery (2010), Skewness and Kurtosis values should be between -2 and +2 for a normal distribution of data. This study's skewness values ranged between -.040 and -1.279, and Kurtosis values ranged between -.666 and +1.623, indicating a normal distribution. The independent sample t-tests and canonical correlation analysis were performed using the PASW 21 with the significance level set at 0.05. For the canonical correlation analysis, the CANCORR syntax software program was employed.

RESULTS

Descriptive statistics

Descriptive statistics concerning student perceptions of a constructivist learning environment, their motivational beliefs, and their self-regulation are presented in Table 3. Mean values above the mid-point of the 5-point Likert scale indicate that the study participants had modest positive perceptions of a constructivist learning environment, whereas their learning goal orientation and self-efficacy beliefs were reported to be relatively high.

Variables	*M*	*SD*
Personal Relevance (PR)	3.12	.69
Uncertainty (U)	2.85	.63
Critical Voice (CV)	2.61	.75
Shared Control (SC)	2.44	.81
Student Negotiation (SN)	2.88	.70
Learning Goal Orientation (LG)	4.19	.75
Task Value (TV)	3.94	.77
Self-Efficacy (SE)	4.08	.79
Self-Regulation of Effort (SR)	3.94	.80

Table 3: Descriptive statistics for 'constructivist learning environment' and 'adaptive learning engagement' scales

Table 4 shows the correlation values indicating the relationship between a constructivist learning environment and adaptive learning engagement.

As Table 4 shows, all variables demonstrated positive and significant relationships at a significance level of .01. Correlation coefficients among the first data set variables (PR, U, CV, SC, SN) ranged between .36 and .64. In contrast, correlation coefficients among the second data set (LG, TV, SE, SR) ranged between .62 and .76. Correlation coefficients between variables in the first and second data sets ranged between .21 and .48.

Variables	1	2	3	4	5	6	7	8	9
PR (1)	1								
U (2)	.61**	1							
CV (3)	.46**	.49**	1						
SC (4)	.36**	.50**	.57**	1					
SN (5)	.61**	.64**	.56**	.55**	1				
LG (6)	.46**	.34**	.32**	.21**	.40**	1			
TV (7)	.48**	.37**	.33**	.25**	.37**	.67**	1		
SE (8)	.48**	.37**	.34**	.21**	.43**	.75**	.67**	1	
SR (9)	.37**	.34**	.33**	.26**	.40**	.69**	.62**	.76**	1

***Correlation is significant at the 0.01 level (2-tailed).*

Table 4: Relationship among the variables

Inferential statistics

Gender-related differences in students' perceptions of a constructivist learning environment, their motivational beliefs, and self-regulation of effort in a science lesson

Independent sample *t*-tests were conducted to identify whether there is a significant difference between females and males in their scores of students' perception of a constructivist learning environment, their motivational beliefs, and self-regulation of effort in a science lesson. The results were displayed in Table 5. As presented in Table 5, independent t-tests results revealed that there is a significant difference between females and males in self-regulation of effort [$t(485) = 2.61$, $p < .05$]. These results implied that female students' scores ($M = 32.22$, $SD = 6.07$) of self-regulation of effort were significantly higher than those of boys ($M = 30.70$, $SD = 6.72$). On the other hand, females and males did not differ significantly in constructivist learning environment perception scores [$t(485) = -.49$, $p > .05$], and motivational beliefs scores [$t(485) = 1.87$, $p > .05$].

	Females		Males			
	M	*SD*	*M*	*SD*	*t*	*p*
Constructivist Learning Environment Perception	69.18	13.26	69.81	15.24	-.49	.63
Motivational Beliefs	99.02	14.33	96.23	18.44	1.87	.06
Self-Regulation of Effort	32.22	6.07	30.70	6.72	2.61	.01

Table 5: Independent t-test results

Relationship between student perceptions of a constructivist learning environment and their motivational beliefs and self-regulation of effort in a science class

Canonical correlation analysis was utilized to explore the relationship between student perceptions of a constructivist learning environment and their motivational beliefs and self-regulation of effort in a science class. The analysis began with an analysis of multivariate significance tests, which indicated the canonical model constructed based on the study data to possess statistical significance [Wilks' $\lambda = .64$, $F(20, 1592.93) = 11.53$, $p < .001$]. Canonical correlation coefficients calculated for the four canonical roots, along with Wilks' λ, Chi-square values, degrees of freedom and significance levels, are given in Table 6.

As Table 6 shows, the first canonical root had a canonical correlation value of .57, with a 32% shared variance for the constructivist learning environment data set and the adaptive learning engagement data set. The second canonical root had a canonical correlation value of .20, with a 4% shared variance for the two data sets. The third canonical root had a canonical correlation value of .16, with a 2% shared variance for the two data sets. In contrast, the fourth canonical root had a canonical correlation value of .03, with a 0% shared variance for the two data sets. While both first and second roots were found to be statistically significant since the canonical correlation value of the second root ($r_c = .20$) was less than .30, in line with Tabachnick and Fidell (2007), only the first root was evaluated (see Table 7).

Roots	r_c	r_c^2	Wilks' λ	χ2	*SD*	*p*
1	.57	.32	.64	11.53	20.00	< .01
2	.20	.04	.94	2.55	12.00	< .01
3	.15	.02	.98	1.88	6.00	.08
4	.03	.00	1	.28	2.00	.76

Table 6: Canonical correlation analysis

	Root 1	
	Canonical Correlations	Canonical Coefficients
Constructivist Learning Environment Variables		
PR	.95	.68
U	.72	.08
CV	.79	.21
SC	.44	-.11
SN	.65	.27
Percent of Variance	.53	
Redundancy	.30	
Adaptive Learning Engagement Variables		
LG	.88	.29
TV	.88	.40
SE	.92	.48
SR	.76	-.05
Percent of Variance	.74	
Redundancy	.42	
Canonical Correlation	.57	

Table 7: Correlations, standardized canonical coefficients, canonical correlations, percent of the variance, and redundancies between constructivist variables of perceptions of a constructivist learning environment and variables of adaptive learning engagement

As Table 7 shows, all the variables in both the constructivist learning environment set and the adaptive learning engagement set were positively correlated with the first canonical variate, with a cut-off correlation of .30 (Tabachnick and Fidell, 2007). In particular, the first pair of canonical variates indicated higher PR, U, CV, SC, and SN levels correlated with higher levels of LG, TV, SE, and SR.

In addition, the first canonical variate was found to account for 53% of the variance in the constructivist learning environment data set and 74% of the variance in the adaptive learning engagement data set. Furthermore, redundancy values revealed that the adaptive learning engagement variables explained 30% of the variance in the constructivist learning environment data set, while the constructivist learning environment variables explained 42% of the variance in the adaptive learning engagement data set. Canonical correlation coefficients between the first canonical root's structural coefficients and the data sets for this root are given in Figure 1.

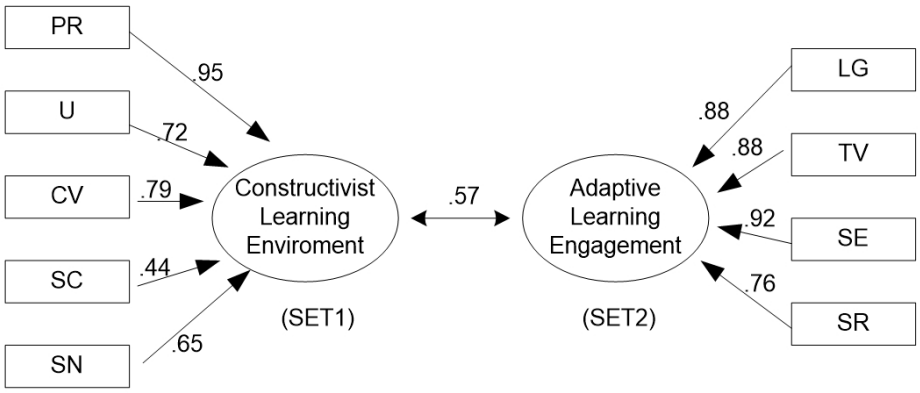

Figure 1: Canonical correlation between the constructivist learning environment and adaptive learning engagement

As Figure 1 shows, personal relevance (PR) had the highest level of canonical load (.95), and shared control (SC) had the lowest level of canonical load (.44) in the first data set, whereas self-efficacy (SE) had the highest level of canonical load (.92) and self-regulation of effort (SR) had the lowest level of canonical load (.76) in the second data set. Figure 2 shows the shared variance by two data sets, as determined based on canonical correlation analysis findings.

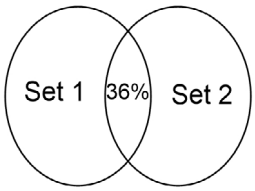

Figure 2: The shared variance by two data sets

As it is seen in Figure 2, the two data sets had a shared variance of 36% (1 - λ) which reflects the amount of the relationship between a constructivist learning environment and adaptive learning engagement.

DISCUSSION

This study determined gender-related differences in students' perceptions of a constructivist learning environment, their motivational beliefs, and self-regulation of effort in a science lesson. The results demonstrated the students' perceptions of a constructivist learning environment and motivation to learn science did not differ by gender. This finding is aligned with the previous studies revealing similar learning environment perceptions (e.g. LaRocque, 2008; Kingir, Gok and Bozkir, 2020) and motivational beliefs (e.g. Cetin-Dindar, 2016; Kingir, Gok and Bozkir, 2020) across gender. On the other hand, students' self-regulation of effort was found different across gender in favor of females. This finding is like the study by Nacaroğlu, Bektaş and Tüysüz (2021).

Correlation analysis explored the relationship between student perceptions of a constructivist learning environment and their motivational beliefs and self-regulation of effort in a science class. The result showed medium-level positive and significant relations between the CLES, comprised of Personal Relevance, Uncertainty, Critical Voice, Shared Control, and Student Negotiation, and the SALES, comprised of Learning Goal Orientation, Task Value, Self-Efficacy, and Self-Regulation of Effort. In line with the prior studies (Cetin-Dindar, 2016; Ozkal, Tekkaya and Cakiroglu, 2009), personal relevance was the variable with the largest contribution in the data set for a constructivist learning environment, suggesting that science teachers should construct an environment in which students realize that the science they are learning at school is relevant to their daily life. Also, in line with previous research (Cetin-Dindar, 2016), self-efficacy was found to be the variable with the largest contribution in the data set for adaptive learning engagement, suggesting that science teachers should organize activities that allow students to gain experience in science subjects, given that experiences of mastery are the most effective means of increasing self-efficacy beliefs (Bandura, 1997).

According to the canonical analysis conducted in this study, middle school students' perceptions of a constructivist learning environment are significantly related to their motivational beliefs and self-regulation of effort. In other words, students who perceive their science-learning environment as relevant to their daily lives, who view scientific knowledge as tentative, who question the teacher's practice, share control of the learning environment with the teacher, and interact with each other in this environment tend to focus on learning and understanding, give importance to the task at hand, have higher self-efficacy beliefs, and can better regulate their efforts in science-learning.

In fact, challenging learning environments that encourage student autonomy and control over learning have been shown to promote the development of adaptive motivational beliefs (Deci et al., 1991). Ram and Navdeep (2019) suggest that the students' motivational beliefs are higher in a constructive learning environment than in traditional learning environments. Hence, the learning environment can be designed to meet the students' needs and interests, and constructivist teaching methods, in which students can express their thoughts and relate what they have learned to their daily lives, can be used rather than traditional teaching methods. For instance, teachers may employ problem-based, project-based or context-based teaching to support students' social and emotional growth. Additionally, teachers may guide students on how to think, give examples and stories from the practice to promote students' attention in class, assure independent works (Berková, Borůvková and Lízalová, 2019).

Previous studies (e.g., Kingir et al., 2013) have also suggested a constructivist learning environment's variables to be positively related to task value. Indeed, given that a classroom learning environment that supports autonomy and choice of a task is known to enhance student interest in academic tasks (Maehr and Midgley, 1991), teachers should be encouraged to give students more autonomy in the classroom environment and their learning in general. To do that, teachers may provide students a voice and a choice in their own learning, encourage students to reflect on their learning, and think critically. Moreover, letting students work together also may improve students' autonomy.

Several earlier studies (e.g., Iverach and Fisher, 2008; Kingir et al., 2013) have shown that variables of a constructivist learning environment are also positively associated with learning goals. Students who perceive science as relevant to daily life view science expertise as developmental, question teachers' instructions, share control of their learning, and negotiate with each other to adopt mastery goals. Since constructivism involves learning-oriented instructional methods and focuses on student negotiation, it may also be suggested that a constructivist learning environment enables learners to adopt learning goals.

In the same vein with Dorman (2001), and Dorman and Adams (2004), the present study's finding that variables of a constructivist learning environment are positively linked to self-efficacy beliefs that have suggested students' self-efficacy beliefs improve when they perceive their learning environment as constructivist. Therefore, teachers may maintain students with some choice of tasks, ensure they interact with one another and utilize constructivist teaching methods such as problem-based learning in order to increase student self-efficacy.

Finally, the present study found perceptions of a constructivist learning environment to be associated with self-regulation of effort. Previous studies have also stated that students who view scientific knowledge as tentative, share control of the learning environment with the teacher (e.g., Kingir et al., 2013), and work cooperatively with each other (e.g., Xu and Ko, 2019) may be expected to have higher levels of self-regulation. Accordingly, science teachers should arrange such a learning environment to encourage student self-regulation of effort. For instance, as Xu and Ko (2019) suggested, changing the layout seats supports independent learning and cooperative learning. Moreover, providing students with challenging tasks along with a supportive environment promotes self-regulation (Yan, 2018).

CONCLUSION

The results concerning the relation of gender, female and male students' perceived their learning environment as constructivists, and had motivational beliefs equally, However, the female students had higher self-regulation of effort scores than the males. In this respect, researchers might conduct studies to explore the reasons for the differences. Determining the factors will help to find a way to increase the self-regulation of effort of males.

Furthermore, any changes in the students' perceptions of a constructivist learning environment will change their motivational beliefs and self-regulation of effort. Therefore, to promote students to have higher scores of self-efficacy and self-regulation, adopt mastery goals, and give value to a task, teachers should provide a constructivist learning environment to them. More specifically, ensuring the dialogue-based relationship between teacher-student and student-student, presenting teacher's support, and encouraging collaborative learning could enhance students' motivation and self-regulation of effort in science.

The findings of this study might benefit science teachers, science teacher educators, and educational policymakers. This study could help teachers realize how important to create a constructivist environment in their classroom. Teacher educators may emphasize the constructivist learning environment while training teachers. Policymakers may organize professional development programs to present teachers with the methods and strategies required to create a constructivist learning environment.

In interpreting this study's results, some limitations should be noted, namely the reliance on students' perceptions and self-reporting of data. To better understand the findings, future studies should be conducted that involve interviews with students and teachers, including observation of the actual classroom learning environment. Additionally, these results are limited to Turkey. Thus, it should be taken into consideration that factors such as culture, structural opportunities, etc. may affect these results. Accordingly, replication studies can be conducted in other countries to help contribute to the results' generalizability. Moreover, because every generation has own characteristics and different needs, replication studies can be employed also for the generations other than generation Z.

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Full research paper

STUDENTS' PERCEPTION OF EMPLOYING SOCIAL MEDIA IN THE EDUCATIONAL PROCESS IN THE LIGHT OF EDUCATION 4.0 REQUIREMENTS

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ABSTRACT

The aim of this study was to discern the students' perception of social media networks integration into the educational process. The study was conducted in seven universities in the Northern region of Jordan. To achieve this goal, authors used the descriptive survey approach. A stratified random sample of 762 students from both genders and different disciplines were targeted. For data collection purposes, a survey tool was designed, which consisted of one polar question, one open question and a questionnaire consisting of fifteen 5-point Likert scale paragraphs. Results indicated that 82.41% of respondents showed constructive attitudes toward the integration of social media to the educational process and indicated their top preferred social media applications. Furthermore, the findings revealed that there was a significant relationship between use behaviour and behavioural intentions, as well as a significant relationship between use behaviour and facilitating conditions. Finally, the results showed no significant statistical difference at $\alpha = 0.05$ between the respondents' statistical means pertaining to students' gender or field of study.

KEYWORDS

Behavioural intentions, facilitating conditions, social media in education, social media networks, technology employment in education, use behaviour

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Highlights

- *The students' perception of social media networks integration into the educational process was investigated via a quantitative approach.*
- *82.41% of respondents showed constructive attitudes toward the integration of social media to the educational process.*
- *The findings showed a significant relationship between use behaviour and both behavioural intentions and facilitating conditions.*
- *The results showed no significant statistical difference between the respondents' statistical means pertaining to their gender or field of study.*

INTRODUCTION

In the light of the advancements in ICT, academic institutions leveraged means and tools of managing the educational process. Nowadays, most of institutions' operations are conducted electronically via the Internet. Majority of financial transactions, administrative operations, student-faculty and student-staff interactions are conducted through web-based applications and software means. Most of the long waiting lines, intensive paperwork and face-to-face transactions have disappeared. Some academic institutions have converted to paperless campuses (Abersek and Flogie, 2017; Ciolacu et al., 2017; Hussin, 2018).

Alongside with the administrative operations, academic institutions have invested in electronic Learning Management Systems (LMS) in the administration of the teaching and learning processes. Educators communicate with their students through LMS to set out teaching outcomes, course objectives, policies and syllabi, in addition to learning material. E-learning platforms allow educators to prepare more interactive learning materials, enriched with video, audio and visual demonstrations.

Thus, more life in the learning material rather than the tiresome and gloomy textural textbook. The enormous worldwide web digital library is a few clicks away from the hands of students. As a result, the teacher of today just needs to guide his students and direct them to get to the right information and access it rather than memorize it (Devi, Gouthami and Lakshmi, 2019; Hussin, 2018). However, there sometimes exist some barriers that hinder the effective implementation of e-learning. Jabor et al. (2013) identified two levels of barriers. Teacher level barriers include lack of confidence and competence, and resistance to change and negative attitudes. Whereas school level barriers include lack of time, effective training, accessibility and technical support.

On the other hand, Social Media Networks (SMN) has brought about the transformation of personal and social changes. More specifically, youngsters (13-25 years of age) intensely use social media as a communication tool. This tool enabled its users to collaborate and communicate between each other as if no boundaries ever existed. Such collaboration enriched personal understanding and disseminated knowledge in all aspects of life (Alshurideh et al., 2019). Social Media Networks not only demonstrated to be a pool for making new friends and a source of news and entertainment, rather they evidently proved efficiency when employed in the teaching and learning process. Several education specialists, who employed them in the education process, indicated that SMN had a confirmatory influence among learners, especially among young generations of learners (aged 19-29 years), who typically spend hours interacting on social media (Alshurideh et al., 2019; Faculak, 2012). These tools restructured the relationship between learners and educators and between learners themselves (Ajjan and Hartshorne, 2008; Devi, Gouthami and Lakshmi, 2019).

Several faculty members at Jordanian universities have sought to utilize the widespread of SMN among their students to enrich the means of communication and interaction with the students and enhance the methodologies they use in the teaching and learning process. Usefulness, ease of use and enjoyment were the perceived reasons behind the use of SMN. Instructors clearly stated that SMN were not a replacement of the university LMS or the e-learning platform, rather an enriching environment. University LMS and e-learning platform were still used to provide common educational services. The new cyberspace though SMN is made available to students in a less formal way as compared to the LMS and e-learning space. Nevertheless, some instructors showed reluctance to the use of SMN in the educational process. Institutional constraints, cultural restrictions and pedagogical issues were among the main concerns of those instructors.

To this end, it is important to discern the students' perception of integrating social media network into the educational process. Such knowledge can help decision makers in higher education institutions as well as educators on the means of enriching the learning experience of learners. It helps in establishing and developing the smart learning environments in alignment with Education 4.0 requirements. On the other hand, investigating the reality of SMN use behaviour and students' perceptions can be of a big asset for researchers in the field. As such, this study came to identify the students' perception of SMN employment in the educational process in Jordanian universities. The study further aimed to identify the impact of students' gender and field of study as moderating factors on their responses. More specifically, the goal of this study was to discern the reality of Social Media Networks (SMN) use behaviour in the educational process in Jordanian universities. To have better understanding of society implications, the study also aimed at investigating the impact of two independent variables on students' responses, namely student's gender and field of study. The rest of the paper is organized as follows: the next section presents a literature review of some recent related studies, followed by the research model and developed hypotheses. After that, the methodology of the study is presented. Then the results and discussion section. Finally, the authors conclude with some concluding remarks and recommendation.

LITERATURE REVIEW

In recent years, researchers and educators referred to Education 4.0 as an emerging term ascended as a result of the advents made in ICT in alignment with Industrial Revolution (IR) 4.0, leading to a smart learning environment. This environment allows educators to obtain advanced and open education that is different in means, tools, strategies, and methodologies (Abersek and Flogie, 2017; Himmetoğlu, Ayduğ and Bayrak, 2020; Peters, 2017). Education 4.0 requires revisiting the educational paradigms. Accordingly, information needs to be made accessible to learners, while learners need to be trained and not taught. They need to learn how to find information rather than the teacher offering it to them in a rigid structure (Anggraeni, 2018; Ciolacu et al., 2017).

Learners are not alike, and they do not have the same starting point. They absorb and digest different areas of focus differently. Therefore, both educators and learners need to be guided to develop their skills to cope with the fast-changing world. Educators need to understand their new role and they need to be equipped with skills and capabilities to play their role effortlessly and fluently. Learners, on the other hand, need to be guided rather than taught a set of predefined learning material. Henceforth, alignment of Education 4.0 with Industry Revolution 4.0 is required to prepare learners for the next industrial revolution which will happen in their lifetime (Anggraeni, 2018; Hussin, 2018).

Moreover, several academic institutions employed SMN in the teaching process as a supporting tool in class implementation (Alshurideh et al., 2019; Faculak, 2012). As a result, all learners could achieve class objectives more rapidly due to the use of these technologies and their accessibility (Alvarez and Olivera-Smith, 2013; Çankaya, Durak and Yünkül, 2014). In addition, these technologies could enrich inter-relations between learners, boost group learning (Prieto, 2014; Swang, 2011), and lead to enhancing the dynamicity of participatory social educational style (Hamilton et al., 2016; Prudencio, 2019). Henceforth, this could achieve the connection between the educational process elements (Chen and Bryer, 2012).

The fact that the learner is the core and main pillar of the educational process, continuously necessitates finding the most proper strategies to enrich his or her skills in retrieving, processing, and understanding information, and to develop

learner's creative thinking (Lin et al., 2013). This requires creating new methodologies and means to the ways in which educators communicate with learners. Traditional LMS for communication between educators and learners, such as Moodle and Blackboard, have a hard time keeping up in learner appeal and ease of operations (Mueller, Peruta and Del Giudice, 2014). For this fact, academic institutions have to work for much broader and ambitious transformations.

The diversity of SMN such as Twitter®, Facebook®, Instagram®, WhatsApp, blogs and others can together be a driving force to enable both educators and learners to communicate and participate actively and promptly in educational activities (Menkhoff et al., 2015). Today, universities and institutions are keen to join social media networks. Several institutions worldwide constructed their own pages on Facebook® and Twitter® to ensure publicity and spread. Such pages allow communication with students and local communities. This ensures reach, participation and interaction of human element with the educational process, attract learners and increases their desire to learn. However, from an institutional perspective they are used mostly for one-way communications.

When Social Media Networks are utilized in the management of the educational process, doors are open for students and learners to communicate with each other and with counterparts worldwide. They can explore state-of-the-art knowledge in their fields of study and express their thoughts and concerns without hesitation. This way, more choices are set for participation and interaction (Alvarez and Olivera-Smith, 2013). This contributes to learner's involvement in the educational process with more harmony, as it's closer to his/her natural lifestyle (Prieto, 2014). In this regard, the general goal of SMN is to setup an active social interactive network to disseminate knowledge and increase multipolar human interaction (Anari et al., 2013).

Perhaps, the role of the educator widens more into a guide and facilitator. He or she encourages his/her students to control their learning process by assuming responsibility with enthusiasm and vigour (Zachos, Paraskevopoulou-Kollia and Anagnostopoulos, 2018). The educator assumes responsibility of coordination, instituting rules and policies, setting up the class objectives, initiating and launching inter-groups discussions, and encouraging the most participation (De Laat et al., 2007; Vonderwell, 2003). Educators may explore and switch between different SMN, and different ways and patterns of utilizing these tools. They can establish closed or open groups on Facebook for example or WhatsApp. From within these groups, learners have more opportunities for dialogue and discussion on any curriculum topic without restricting themselves to pages in textbook or course notes (Al-Rahmi et al., 2015). Tweets on Twitter can help learners to obtain experiences and knowledge through even if outside the scope of the course they are studying, which enhances their self-confidence and self-accessing to knowledge and to be more initiative (Peters, Costello and Crane, 2018; Tang and Hew, 2017). Being exposed to such tools enhances positive energy and reduces negative attitudes towards learning and participation. Silence and inactive behaviours are nulled in such an entertaining environment (Arquero and Romero-Frias, 2013).

In the recent few years, several studies were conducted which addressed the use of social media networks (MSN) in the teaching and learning process. Different aspects of MSN employment were investigated. In this section, some of the key studies are presented.

Roebuck, Siha and Bell (2013) carried out a study seeking to understand the perceptions of professors using social media in the classroom. The authors further found that there were no significant differences in professors' responses regarding advantages and disadvantages of employing social media in the classroom, regardless of gender or rank. In another study by Çankaya, Durak and Yünkül (2014), the authors investigated the reasons behind using the Internet and Edmodo by undergraduate students. It was found that the students expressed positive attitudes towards Edmodo, especially features related to assignment, quiz, poll and announcement/sharing.

Quansah, Fiadzawoo and Kuunaangmen (2016) studied students' engagement in social media in teaching and learning and its significance on their academic performance. Reported results indicated that students preferred mostly Facebook, WhatsApp, and Google+, YouTube and Twitter. In addition, majority of students indicated that social media positively influenced their academic performance. Furthermore, Manca and Ranieri (2016) accomplished a study to identify the uses of social media in teaching practices as seen by the Italian academic staff. Revealed results showed that the use of SMN was still restricted. It was reported that instructors were not much motivated to integrate this technology into their practices for several reasons. Among the reported reasons were cultural resistance, educational issues and institutional constraints. Overall, the results emphasized undecided attitudes towards SMN usage with challenges prevailing over advantages.

Williams and Adesope (2017) carried out a study to investigate the attitudes of undergraduates towards the use of social media for learning purposes in the University of Port Harcourt, Nigeria. It was found that social media were used in educational practices for fast progression in knowledge and information. In addition, it was found that students used online social media to explore topics that they are interested in, and they used Facebook, Twitter, WhatsApp, Skype, YouTube, Opera Mini and WeChat for educational purposes. Sarwar et al. (2019) conducted a study that addressed the students' perception of using social media in the light of the Technology Acceptance Model (TAM) and Constructivism Theory. The reported results emphasized that perceived usefulness, perceived ease of use, and perceived enjoyment have positive impact on social media usage. It was further reported that social media usage enriches the learning environment, enhances cooperation and communication among students, strengthens their learning behaviour, and improves performance. On the other side, the results indicated that the impact of perceived enjoyment on collaborative learning was negative. Furthermore, authors found that Cyberbullying has a negative impact on the relationship between collaborative learning and learner performance.

The abovementioned studies and several others that can be

found in the literature investigated the impact of using social media networks in the educational process. Researchers found several advantages for that usage; however, some drawbacks were reported as well. This ignites the need to study students' perspective toward the use of social media networks in the teaching and learning process in Jordanian universities. Very rare studies have been conducted in Jordan, a conservative society, on the impact of SMN usage in the educational process management. The main goal was to discern the degree of MSN usage and the impact of that usage as seen by the students themselves.

RESEARCH MODEL AND HYPOTHESES

Technology Acceptance Model (TAM) was first proposed by Davis (1989), and it was based on the theory of reasoned action (TRA) by Fishbein and Ajzen (1975). According to TRA, individual's behaviour is driven by behavioural intention. Henceforth, behavioural intention is a function of an individual's attitude toward the behaviour. Therefore, according to TRA, behaviour is a function of attitudes and beliefs.

According to TAM, user's attitude towards using a technology is driven by two factors. Those factors are perceived ease of use and perceived usefulness. User's attitude leads to behavioural intentions, hence actual use. In addition, perceived ease of use has an impact on perceived usefulness of technology (Davis 1989). According to Davis (1989: 320), perceived usefulness refers to the degree to which the user believes that the use of technology improves performance, while perceived ease of use refers to how effortless the user perceives using the technology will be. Furthermore, the author suggested that perceived ease of use hypothetically influences perceived usefulness and attitudes towards using the technology. Such attitude towards using the technology determines the behavioural intention to use that technology. Masrom (2007) proposed a modified model based original TAM specific to e-learning. In the modified model by author, the use behaviour and external variables in the original TAM were eliminated.

Earlier, a more prominent modification on the TAM model was presented in the work by Venkatesh et al. (2003). In this work, the Unified Theory of Acceptance and Use of Technology (UTAUT) was proposed. In which, authors identified the constructs that have impact on the adoption of technology: namely Performance Expectancy, Effort Expectancy, Social Influence, and Facilitating Conditions. While the first three constructs were considered to be direct determinants of behavioural intention, Facilitating Conditions was considered a direct determinant of user behaviour. The authors studied the impact of several moderating factors on the aforementioned constructs.

In recent years, the TAM model and its modifications have extensively been used by researchers to investigate the attitudes towards technology usage, behavioural use, and the driving factors. An example on these studies that addressed SMN employment in education include but not limited to the study by Dhume et al. (2012), which investigated the adoption of social media by business education students based on TAM model. Another example is the study by Amadu et al. (2018), in which authors used TAM to measure the use of social media for collaborative learning in Ghana. A third example is the study by Arif and Kanwal (2016), in which authors studied the adoption of social media technologies and their impact on students' academic performance in Pakistan. Finally, the study by Alenazy, Al-Rahmi and Khan (2019), where authors validated TAM on social media use for collaborative learning to enhance collaborative authoring.

In the light of this and because of the huge advents made in the broad field of information and communication technology (ICT), instructors in Jordanian universities were inspired to utilize this technology in the educational process. They sought to harness the available technological capabilities in a manner that commensurate with the nature of young students' lifestyle in accordance with Education 4.0 requirements. Exploitation of Social Media Networks (SMN) in the educational process was a viable choice that aligns with formal LMS and e-learning platforms. To achieve the goals of this study, as mentioned in the Introduction section, we proposed the model of the study as shown in Figure 1.

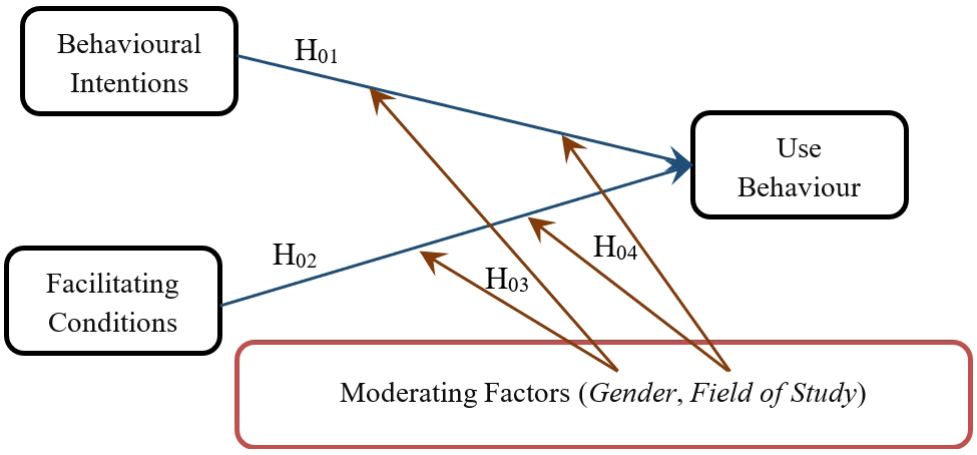

Figure 1: Proposed research model

According to the proposed model, the *Use Behaviour* is driven by *Behavioural Intention* and *Facilitating Conditions*. Users, students in this case, develop positive attitudes towards the use of social media networks (SMN), and hence build behavioural intentions, if they believe using these networks improves performance (usefulness) and if they believe using this technology is effortless (ease of use). The other factor that drives the *Use Behaviour* is *Facilitating Conditions*. This refers to the organizational role and the technological infrastructure that assists the adoption of the technology. Finally, the proposed model suggests that two moderating factors may have impact on the estimates of the students; namely: student's *Gender* and *Field of Study*.

As such, the study aimed to examine the following hypotheses:

- H_{01}: *There is no significant relationship between Behavioural Intentions and Use Behaviour of social media networks in the educational process.*
- H_{02}: *There is no significant relationship between Facilitating Conditions and Use Behaviour of social media networks in the educational process.*
- H_{03}: *There is no significant difference in Use Behaviour of social media networks in the educational process related respondent's Gender.*
- H_{04}: *There is no significant difference in Use Behaviour of social media networks in the educational process related to respondent's Field of Study.*

Additionally, the study aimed to identify the most preferable social media applications for students. To achieve this goal, the following research question was raised:

- *What are the SMN applications students prefer the most to be used in the educational process?*

MATERIALS AND METHODS

Several faculty members at Jordanian universities have sought to utilize the widespread of SMN among their students to enrich the means of communication and interaction with the students and enhance the methodologies they use in the teaching and learning process. The goal was to make the learning environment more entertaining and fun, and to boost students' interaction and to maximize participation. In other words, usefulness, ease of use and enjoyment were the perceived reasons behind the use of SMN. Instructors started by providing a list of policies and rules for communication between instructors and students through SMN that respect privacy and ethical manners. Allowed behaviours versus prohibitions were clearly stated with clear standards of rewarding and penalties.

Instructors clearly stated that SMN were not a replacement of the university LMS or the e-learning platform, rather an enriching environment. University LMS and e-learning platform were still used to provide common educational services, like objectives and learning outcomes of the courses they teach, syllabi, exams dates, links to course material and supporting materials, and course homework and activities. Yet, SMN were utilized to elaborate on these items, discuss any related topic, communicate, and respond to students' requests and questions. Class groups were created and managed as well as small focus groups for different educational purposes. The new cyberspace is made available to students in a less formal way as compared to the LMS and e-learning space. Some instructors even allowed students' activity submission through social media. SMN were further used to disseminate grades, provide feedback, schedule appointments and process special requests.

Some instructors showed reluctance to the use of SMN in the educational process. Institutional constraints, cultural restrictions and pedagogical issues were among the main concerns of those instructors. To this end, this study came to identify the students' perception of SMN employment in the educational process in Jordanian universities. The study further aimed to identify the impact of students' gender and field of study on their responses. In the light of this and to accomplish the goals of the study and, hence, examine the validity of the proposed hypotheses and answer the raised research question, a descriptive survey approach was used. In this section, the methodology employed in this research is presented.

Population and Sample

The study population consisted of all students in Jordanian Universities in the North region of Jordan. There are seven universities in the Northern region, three public and four private universities. According to the statistics of the Jordanian Ministry of Higher Education in the academic year of (2019/2020), there were around (90,000) students from both genders and in different fields of study (https://mohe.gov.jo/en/list/statistics).

According to the universities' categorization, the fields of studies are divided into two main streams: Scientific Studies and Social Studies and Humanities. Scientific Studies include Engineering Technology; Science; Computer and Information Technology; Medicine; and Pharmaceutical Studies. Social Studies and Humanities, on the other hand, include Arts; Islamic Studies; Business; Fine Arts; Physical Education; Law; Education; Anthropology; Tourism; Communication Media. To guarantee representation, a stratified random sample of (1000) students were targeted from both genders and different fields of study, out of which (762) complete responses were secured within time. Table 1 shows the demographic distribution of respondents according to their *Gender* and *Field of Study.*

Moderating Factor	Categories/Levels	Frequency	Percentage
Gender	Male	290	38.1%
	Female	472	61.9%
	Total	762	100.0%
Field of Study	Scientific Studies	506	66.4%
	Social Studies & Humanities	256	33.6%
	Total	762	100.0%

Table 1: Demographic distribution of the study sample according to moderating factors

Data Collection

The study employed the descriptive survey approach to reveal opinions. To achieve the goals of the study, authors designed a study instrument (tool), which consisted of demographic information about the respondent, a polar question (Yes/No), an open question and finally a questionnaire consisting of fifteen 5-point Likert scale paragraphs. The demographic information includes student's university, field of study, and gender. The polar question was intended to indicate whether the targeted student was in favour of employing SMN in the educational process or not. The third part of the study instrument was an open question intended to reveal the student's favourite SMN applications in the educational process. Finally, the questionnaire part consisted of fifteen 5-point Likert scale paragraphs measuring the Use Behaviour of SMN in the educational process as seen by the students. Those paragraphs were divided into two domains; namely: *Behavioural Intention* and *Facilitating Conditions*, as it was proposed in the study model. To verify the validity of content, the questionnaire was presented in its initial form to a group of (11) experts and specialists in the field. Their opinions on the questionnaire paragraphs in terms of clarity and suitability to the study objectives were taken carefully. The questionnaire was revised to its final form accordingly.

To verify the reliability of the questionnaire and to check its internal consistency, it was applied to a pilot sample of (30) students different from the study sample. When Cronbach's α analyses was performed on the data collected from the pilot sample, the coefficient (α) was found to be in the range from (0.83 – 0.94) with an overall value of (0.88). This indicated that the questionnaire paragraphs were internally consistent with reliable and suitable quality (Nunnally, 1978).

Study Variables

This study considered two independent variables (moderating factors), namely: *Gender (Female, Male)* and *Field of Study (Scientific Studies, Social Sciences & Humanities)*. The classification of the latter variable was based on the Jordanian universities' categorization of the fields of study that agrees to a great extent with world standards.

Data Analysis and Processing

The Statistical Package for Social Sciences (SPSS) was used to perform the statistical analysis. Qualitative analysis was performed to reveal results about students' intentions and preferences. While quantitative analysis was conducted to estimate students' responses to the questionnaire. Linear regression and ANOVA analysis were conducted to examine the validity of the developed hypotheses after verifying that analysis conditions for ANOVA were met. To construct judgements on the means, the 5-point Likert scale (1-5) was divided into two grades (*Low or High)* such that if the mean was equal to (3.0) or above it was considered (*High*), whereas if it was less than (3.0) it was considered (*Low*) (Odeh, 2010).

RESULTS

A stratified random process was used to guarantee participation from all seven universities from both genders and different study disciplines. The study tool was distributed to (1000) targeted students electronically with directions for participation and deadlines. Several reminders and follow up messages were sent to students to guarantee highest participation possible. As a result, 762 complete responses were secured, while 238 students did not respond within time. As such, the subsequent analysis was based on those complete responses, Table 1.

In an aim to reveal results regarding the polar question, which was related to students' attitude toward the use of SMN in the educational process, descriptive frequency analysis was conducted, as shown in Table 2.

Attitude	Frequency	Percentage
Positive	628	82.41%
Negative	134	17.59%
Total	762	100%

Table 2: Students' attitude toward the use of SMN in the educational process

It is obvious from the results shown in Table 2 that a great majority of students have developed constructive attitudes for MSN usage in creating positive learning atmosphere among students. This result can be understood from the fact that SMN have become very widely spread among young generations in their social communications. Social media is heavily used among peers and friends in almost all aspects of daily activities. Therefore, no wonder that students developed positive and constructive attitudes towards their use in education.

To reveal students' preferences on the SMN applications to be

used in the educational process, they were asked to list his/her preferences. When the responses to this open question were analysed, the frequencies of occurrences and percentages were as portrayed in Figure 2.

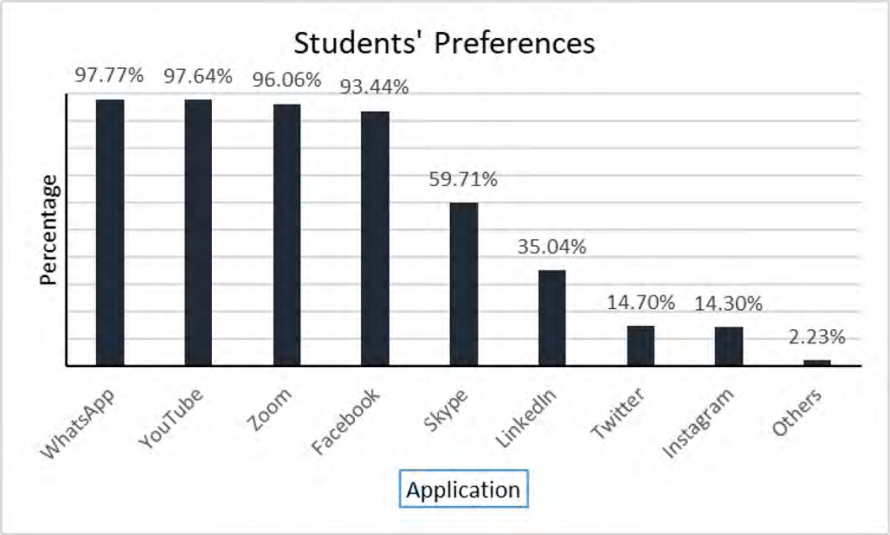

Figure 2: Percentages of students' preferences of SMN applications

To examine the validity of the developed hypotheses, the statistical means and standard deviations of the students' responses to the questionnaire paragraphs were calculated. Table 3 portrays the obtained results.

	Paragraph	$\bar{x}$	*SD*	Degree
Behavioural Intention				
P1	You believe that the use of SMN to disseminate course information eases collaboration.	3.75	0.814	*High*
P2	You believe that the instructor's use of SMN to disseminate policies and rules of conduct eases the burden on you	3.70	0.864	*High*
P3	You believe that the instructor's use of SMN to provide references and supporting material enriches your learning experience	3.25	1.152	*High*
P4	You believe that the use of SMN facilitates answering your queries and questions in a timely manner.	3.64	0.860	*High*
P5	You believe that the use of SMN to exchange practicing exercises improves curriculum understanding	3.34	0.983	*High*
P6	You believe that the use of SMN for posting/submitting assignments eases the burden on you	3.59	0.996	*High*
P7	You believe that the instructor's use of SMN to conducts virtual group meetings enhances the learning experience	3.59	0.974	*High*
P8	You believe that the use of SMN to schedule individual or group face-to-face meetings improves communication.	3.68	1.028	*High*
P9	You believe that the use of SMN does not jeopardize your privacy	3.20	1.028	*High*
P10	You believe that using SMN increases your interaction with the instructor and peers in a less formal and more effective way	3.09	0.942	*High*
	Overall (*Behavioural Intention*)	3.48	0.575	*High*
Facilitating Conditions				
P11	You can always find technical support on SMN	3.77	0.884	*High*
P12	The campus environment supports the use of SMN	3.67	0.898	*High*
P13	Your university administration encourages the use of SMN for educational purposes	3.68	0.884	*High*
P14	Your university conducts training for the use of SMN in education	3.64	1.058	*High*
P15	Using SMN is economically affordable	3.81	0.931	*High*
	Overall (***Facilitating Conditions***)	3.71	0.642	*High*
Overall (*Use Behaviour*)		3.56	0.531	*High*

Table 3: Statistical means (*X*) and standard deviations (*SD*) of students' responses

As can be seen from Table 3, overall students believed that the degree of *Use Behaviour* of SMN in the educational process was *High* with an average of (3.56). Before examining the validity of the developed hypotheses, the collected data must possess a normal distribution. Therefore, it was first required to carry out the normal distribution test, the results are shown in Table 4.

	Shapiro-Wilk		
	Statistic	df	Sig.
Behavioural Intention	0.977	762	0.180
Facilitating Conditions	0.970	762	0.321
Use Behaviour	0.974	762	0.189

Table 4: Normal distribution test using Shapiro-Wilk test

Furthermore, it can be seen from Table 3 the variance values among the groups are very close and range from (0.531) to (0.642), which fairly reflected homogeneity. Lastly, the participants' responses were independent. These findings constitute the basic requirements for performing ANOVA analysis.

To examine the validity of the first proposed hypothesis ($H_0$1), linear regression and ANOVA analysis were conducted with *Use Behaviour* as a dependent variable and *Behavioural Intention* as an independent driving factor. The results of these analysis are as shown in Table 5.

R	R^2	Adjusted R^2	Std. Error of the Estimate	Change Statistics				
				R^2 Change	*F* Change	df1	df2	Sig. *F* Change
0.941	0.885	0.885	0.17999	0.885	5858.543	1	760	< 0.001
Results of ANOVA Analysis								
	Sum of Squares		df	Mean Squares		F		Sig.
Regression	189.803		1	189.803		5858.543		< 0.001
Residual	24.622		760	0.032				
Total	214.426		761					

Table 5: The impact of *Behavioural Intention* on *Use Behaviour*

As can be seen from Table 5, the value of (R^2) was (0.885), which means that (88.5%) of the *Use Behaviour* was highly driven by *Behavioural Intention*. Furthermore, ANOVA analysis showed that the value of the significance was (< 0.001), which means that we reject the hypothesis (H_{01}) at a significance level of ($\alpha = 0.05$) That is, there was a significant relationship between Use Behaviour and Behavioural Intention. These findings emphasized the results reported in Table 3.

To examine the validity of the second hypothesis (H_{02}), the same analysis was carried out with Use Behaviour as a dependent variable and *Facilitating Conditions* as a driving factor. The results were as shown in Table 6.

R	R^2	Adjusted R^2	Std. Error of the Estimate	Change Statistics				
				R^2 Change	*F* Change	df1	df2	Sig. *F* Change
0.795	0.632	0.631	0.32226	0.632	1304.764	1	760	< 0.001
Results of ANOVA Analysis								
	Sum of Squares		df	Mean Squares		*F*		Sig.
Regression	135.500		1	135.500		1304.764		< 0.001
Residual	78.926		760	0.104				
Total	214.426		761					

Table 6: The impact of *Facilitating Conditions* on *Use Behaviour*

It can be noticed from Table 6 that the value of (R^2) was (0.632), which means that (63.2%) of the *Use Behaviour* was driven by *Facilitating Conditions*. In addition, ANOVA analysis showed that the value of the significance was (< 0.001), which means we that we reject the hypothesis (H_{02}) at a significance level of ($\alpha = 0.05$). That is, there was a significant relationship between *Facilitating Conditions* and *Use Behaviour* of social media networks in the educational process.

To examine the impact of the moderating factors (*Gender* and *Field of Study*) on the *Use Behaviour* estimates and hence to examine the validity of (H_{03}) and (H_{04}), the statistical means and standard deviations of the students' responses were recalculated according to those factors. Table 7 summarizes the obtained results.

It can be easily noticed from Table 7 that there were apparent differences in statistical means of respondent opinions related to both *Gender and Field of Study*. As far as gender is considered, those differences were in favour of male students. Whereas the differences were in favour of students in social studies and humanities fields. To evaluate the significance of these differences, two-way ANOVA without interaction was performed. The results of this test are shown in Table 8.

Source	Sum of Squares (Type III)	Δf	Mean Square	F	Sig.
Gender	0.899	1	0.899	3.200	0.074
Field of Study	0.620	1	0.620	2.208	0.138
Error	212.864	758	0.281		
Total	9867.675	762			
Corrected Total	214.426	761			

Table 8: Results of two-way ANOVA analysis of *Use Behaviour* with respect to moderating factors

It is evident from the results in Table 8 that there were no significant statistical differences between the means of students' estimates of *Use Behaviour* related to either *Gender* (Sig. = 0.074) or *Field of Study* (Sig. = 0.138) at a significance level of ($\alpha = 0.05$). Therefore, we do not reject both hypotheses (H_{03}) and (H_{04}), emphasizing that there were no significant differences in estimates' means with respect to *Gender* or *Field of Study.*

DISCUSSION

The findings reported in the previous section indicated that a great majority of students have developed constructive attitudes for MSN usage in creating positive learning atmosphere among students, Table 2. The widespread usage of SMN among young generations made them viable and attractive tools to use for learning (Alshurideh et al., 2019; Quansah, Fiadzawoo and Kuunaangmen, 2016). The availability of SMN at low cost, their reliability, friendly and informal nature of these tools made them a proper choice (Alvarez and Olivera-Smith, 2013; Çankaya, Durak and Yünkül, 2014; Quansah, Fiadzawoo and Kuunaangmen, 2016; Roebuck, Siha and Bell, 2013). Therefore, no wonder that students developed positive and constructive attitudes towards their use in education. Figure 2 has shown the students preferred platforms like WhatsApp, YouTube, Zoom and Facebook the most to be used in the educational process. These results corresponded with the results reported in (Quansah, Fiadzawoo and Kuunaangmen, 2016).

The findings further indicated that there was a significant relationship between *Use Behaviour* and *Behavioural Intention*, Table 4. In addition, results in Table 5 indicated that there was a significant relationship between *Use Behaviour* and *Facilitating Conditions*.

To this point, we can conclude that students revealed that the *Use Behaviour* of SMN in the educational process was driven by the *Behavioural Intentions* and *Facilitating Conditions*. They saw that SMN could be used effectively and efficiently to enhance their learning experience through dissemination of course information and policies and rules of conduct. The communication and interaction with their peers and instructors could be made more interesting and beneficial though the exchange of enriched multimedia course material and common best practices and exercises. Students believed that this type of interaction never jeopardizes their privacy. Furthermore, the students revealed that the encouragement they receive from the university leaders, and the technical support and training they receive as well as the affordability of SMN usage, altogether played an important role in their decision to use SMN in the educational process.

What eased the use of these less-formal tools was perhaps the wide spread of social media networks usage in everybody's life together with the presence of smartphones and smart devices in the hands of almost everyone. Social media tools give everyone the feeling that everyone else is within reach. These tools are more entertaining and friendlier. Students do not need to set up appointments at certain specific times with their instructors or counterparts. They can contact each other anytime of the day even on weekends and after work hours. Instructors do not have specific times to respond, post a comment, raise a discussion issue, post a class activity or even chit chat with a group of students. Theoretically speaking, the whole group including the instructor are available 24 hours a day and 7 days a week. Dealing with groups through social media reduces time and effort, contributes to creating a friendly and entertaining atmosphere that most instructors and students seek to achieve, and improves students' engagement.

To this end, these results agreed with the theoretical framework presented above. In particular, these results agreed with the original TAM model (Davis, 1989) and the modifications on it. Furthermore, these results agreed with the Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al., 2003). More importantly, these results supported the proposed study model. In addition, these results agreed with most reported previous studies, like Çankaya, Durak and Yünkül (2014) and Roebuck, Siha and Bell (2013).

On the other side, the findings reported in Table 7 emphasized that there were no significant statistical differences between the means of students' estimates of Use Behaviour related to either Gender or Field of Study at a significance level of ($\alpha = 0.05$). Despite that the initial results indicated apparent differences in favour of male students and those studying social studies and humanities, yet those differences were not genuine. This may be interrelated to the fact that students from different disciplines experienced the same teaching environment in the university and they were subject to the same conditions. Same bylaws and regulations governed their presence, and they were exposed to the same situations regardless of gender or discipline.

Those results align with the proposed study model. In addition, those findings agreed in principle with (Roebuck, Siha and Bell, 2013) from the fact that gender was not a significant cause of differences in the opinions of respondents. On the other hand, the results agreed with (Quansah, Fiadzawoo and Kuunaangmen, 2016), even though the study targeted faculty members rather than students. Yet, both studies agreed that there were no significant differences between means due to field of specialization. Moreover, the results agreed with results reported in (Roebuck, Siha and Bell, 2013) and in (Williams and Adesope, 2017), who studied students from the same specialization or different specializations.

Educators and learners are at the verge of a dawn of a new era, where the pen and textbook will be replaced by a smart device and a virtual information repository. Educators need to understand their new role of being guiders and facilitators. And so, they need to equip themselves with skills and capabilities to play the new role effectively. Learners need to be guided rather than fed with a predefined learning material (Hussin, 2018). Teaching and learning methodologies must change and adapt to the fast-changing technology. Education leaders and administrators ought to review governing legislations to open the doors wide for integrating the latest technological advents and tools in the educational process and to switch from the traditional campus to a smart learning environment. They need to investigate the means to enrich students' as well as instructors' perception of utilizing these tools in the teaching and learning process and improve students' engagement.

The results of this study and similar results reported in the literature should serve as a guide to practitioners as well as legislators to start a reform process of teaching and learning strategies. So, new horizons are opened for students towards obtaining the skills required to indulge into the new era of education that aligns with Industrial Revolution 4.0.

Before last, it is important to mention here that the study's limitations were that the study was conducted during the academic year of 2019/2020 in universities in the Northern region of Jordan. The results were based on the assumption of the objectivity of the respondents. Furthermore, the data was collected under the assumption of the suitability, validity and reliability of the designed questionnaire as described in the methodology section. Therefore, the obtained results are constrained by these limitations.

These findings represent solid evidence to administrators of higher education institutions globally to encourage and convince instructors and students how easy it is to integrate SMN and how useful this technology is for them. Thereby encouraging a diffusion of this innovative technology in their teaching and learning processes. Due to growth in remote learning, together with the fast-changing world, it is important to employ technology to enrich the learning experience of learners. The diffusion of social media networks (SMN) among young generations makes these networks a potential tool for teaching and learning besides socialization.

Finally, the findings can be beneficial to researchers in this field, where they can utilize and build on. The authors highly recommend conducting similar studies taking into account the instructors' perspective of SMN use. In addition, authors recommend addressing the challenges and obstacles facing the diffusion of this technology in higher and general education.

CONCLUSIONS

The results obtained in this study revealed that use behaviour of social media networks in the educational process is highly driven by students' behavioural intentions and learning environmental facilitating conditions. Students developed positive attitudes toward using social media networks in the educational process. In the light of these results, authors highly recommended that university leaders adopt the latest technological advents and tools and incorporate them in the educational process. It is recommended to investigate the means to enrich students' as well as instructors' perception of utilizing these tools in the teaching and learning process and improve students' engagement.

Revision of bylaws and policies could be needed to permit and regulate the implementation of social media in education. This might require conducting training and awareness sessions for instructors as well as students through continuing education and orientation programs in the educational institutions. Finally, authors recommend continuous evaluation of technology employment in the educational process in an aim to develop new teaching and learning strategies, methodologies, and paradigms. Such that, new horizons are opened for students towards obtaining the skills required to indulge into the new era of education that aligns with Industrial Revolution 4.0.

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INTERNET ADDICTION IN UNIVERSITY STUDENTS – CZECH STUDY

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ABSTRACT

The main purpose of the presented study is to explore the existing risk of Internet addiction for undergraduate students of Czech universities. The research was conducted as quantitative research; a CIAS-R questionnaire was applied. The data were collected in the years just before the Covid-19 pandemic (between October 2019 and March 2020). 3,366 respondents (2,151 females and 1,215 males) participated in our questionnaire survey. The average CIAS-R score achieved by our respondents was 44 points. It equals 6% of addicted college students (when applying the cut-off point of 63/64), and 3% of addicted students (when applying the cut-off point of 67/68). A significantly higher risk was revealed in males and in full-time students compared to females, and part-time students, respectively. The type of faculty studied was proved to be a significant intervening variable. Applying the 63/64 cut-off point, we revealed 5.6% of addicted students among the students of faculties of education, which is alarming (even if we consider the fact that applying the 67/68 cut-off point, we revealed 2.7% of addicted students.). These students represented almost 50% of our respondents, and they, as future teachers, will play an important role in the prevention of risky behavior.

KEYWORDS

CIAS-R questionnaire, Internet addiction, screening and digital criteria, university students

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Highlights

- *Males have a significantly higher risk of Internet addiction in the spheres of interpersonal problems, health problems and time management problems.*
- *Females are at higher risk of Internet addiction in the sphere of tolerance symptoms.*
- *With advancing age, there is a lower incidence of Internet addiction.*
- *The type of faculty studied is a significant intervening variable.*

INTRODUCTION

Since the 1980s, the scope of research interest in addiction has expanded and now it includes a new sphere of addictive behavior, so-called behavioral addictions, which are beyond the classical scheme of addiction to psychoactive substances. Some behavioral addictions are considered to be basically very similar to substance addictions (Grant et al., 2010).

Other terms (besides that of behavioral addiction), such as non-substance addictions, non-chemical addictions or non-drug addictions, and non-toxic addictions, also refer to this new type of addictive behavior (Potenza, 2009; Zou et al., 2017; Chóliz, 2012; Vacek and Vondráčková, 2014). The most common terms used in the sphere of addictions to new technologies are those of technological or digital addictions (Chóliz, 2010). A special type of these technological addiction is Internet addiction. (Remark: 'The literature uses interchangeable references such as "compulsive Internet use", "problematic Internet use", "pathological Internet use", and "Internet addiction"' (Zenebe et al., 2001: 1).

Young (1998) drew on the diagnostic model of pathological gambling, and she defined Internet addiction as a compulsive and impulsive disorder that does not cause intoxication.

Nowadays, experts discuss possible ways of the classification of Internet addiction. The issue whether to consider this diagnostic unit as a primary psychiatric disorder or as a consequence of other mental disorders is also discussed (Bipeta et al., 2015). Some authors define Internet addiction as the inability of individuals to control their using of the Internet, which leads to feelings of anxiety and functional disruption of daily activities (cf. (Douglas, 2008). Other authors, such as Bipeta et al. (2015), consider Internet addiction to be a consequence of the obsessive-compulsive disorder. But also these authors define

Internet addiction in a way similar to the one mentioned above – it is individuals' inability to control the extent to which they use the Internet.

Generally speaking, Internet addiction can be defined as using the Internet in such an excessive way that everyday life collapses, which can gradually lead to a complete breakdown of personal life, social relationships, working habits and sleep patterns, and to medical problems such as mood disorders, anxiety, depression and even suicidal ideation (see e.g. Hong et al., 2014; Lai et al., 2015; Goswami and Singh, 2016; Hawi and Samaha, 2016; Poli, 2017; Cheng et al., 2018; Hinojo-Lucena et al., 2019; Ioannidis et al., 2019; Chi, Hong and Chen, 2020; Shen et al., 2020; Tóth et al., 2021).

Internet addiction is perceived (based on triggers of compulsive behavior) as a broad category that includes several subtypes of addiction. A five-dimensional view of Internet addiction is very often used. This approach distinguishes the following sub-dimensions (see Young et al., 1999, Goswami and Singh, 2016, Poli, 2017, Pan, 2020):

- Cybersex addiction
- Addiction to cyber relationships
- Net-compulsions
- Information supersaturation
- Addiction to computer games

A common feature of all forms of Internet addiction is getting a nice feeling in a quick and easy way.

Modern digital technologies are becoming a common part of the daily routine of university life. The professional public very often perceives university students as one of the most at-risk groups. 'The high prevalence is usually attributed to students' easy access to the internet, flexible daily program, and to the fact that after enrolling in university, most of them are in a new environment without their previous social ties and start to build new relationships and social status, which is largely facilitated by the Internet.' (Chraska, 2019: 559)

Some studies (e.g. Hsieh et al., 2018; Zhang et al., 2018) suggest that the incidence of Internet addiction is independent of the gender of students. The others revealed a higher prevalence of Internet addiction in men than in women (e.g. Poli, 2017; Li et al., 2018; Milkova and Ambrozova, 2018; Hinojo-Lucena et al., 2019; Grover et al., 2019; Hayat, Kojuri and Amini, 2020). Similarly, no significant differences are revealed in studies (e.g. Li et al., 2018) concerning the types and orientation of study fields, whereas other findings confirm significant differences among faculties (e.g. Zhang et al., 2018). Age has proven to be a factor that positively correlates with the sphere of the risk of Internet addiction (cf. Hsieh et al., 2018; Grover et al., 2019; Chiu, 2019).

Being familiar with the above-mentioned findings, in our research, we focused on students of Czech universities. The purpose of the presented research is to detect the prevalence of Internet addiction among university students in the Czech Republic and its risk factors, including gender, age, the form of studies (full-time vs. part-time), the type of university studied and study specializations.

The Materials and Method section presents the questionnaire used in our research, and then it presents the research process. In the Research Results section, the quantitative data analysis is presented. The Discussion section compares our research findings with the findings made in previous research cases. The Conclusion and Future Work section briefly summarizes the most important results, and presents our further research planned in the field of Internet addiction.

MATERIALS AND METHODS

The presented study focuses on university students. Its main purpose is to explore the existing risk of Internet addiction for undergraduate students of Czech universities. The data were collected between October 2019 and March 2020.

From a wide range of more than 21 research and diagnostic tools focusing solely on Internet addiction (see Kuss and Lopez-Fernandez, 2016), we chose the Revised Chinese Internet Addiction Scale (CIAS-R), i.e. the questionnaire which is referred to (based on its author) as the "Revised Chen Internet Addiction Scale" (Chen et al., 2003; Ko et al., 2005).

CSIAS-R

CIAS-R is a worldwide used self-report questionnaire designed to measure participants' addiction to the Internet. The questionnaire includes 26 items, each of them is scored on a 4-point scale: 1 (never = does not match my experience at all), 2 (hardly ever), 3 (often), 4 (nearly always = definitely matches my experience). That means, the minimum possible score to be achieved is 26, the maximum possible score to be achieved is 104. Higher scores indicate a more severe level of Internet addiction.

CIAS-R was originally designed for adolescents, the screening cut-off point of 57/58 and the diagnostic cut-off point of 63/64 are considered. According to Ko et al. (2009), the cut-off points of 63/64 and 67/68 of the CIAS-R are considered to be the best screening and diagnostic cut-off points, respectively, when college students are focused.

The individual CIAS-R scales refer to 5 following factors of various problems related to Internet addiction:

- compulsive symptoms (five items) - symptoms associated with the compulsive need to connect to the Internet,
- withdrawal symptoms (five items) - symptoms associated with discomfort resulting from the situation in which the Internet is disconnected or unavailable,
- tolerance symptoms (four items) – symptoms manifested by a longer time spent on using the Internet,
- interpersonal & health problems (seven items) – problems associated with negative impacts of the Internet use on the bio-psycho-social health of users,
- time management problems (five items) – problems associated with impaired control over the user's own behavior.

The biggest advantages of the tool are its easy administration and the fact that it is not time-demanding (the time spent on completing it should not exceed 10 minutes). The tool has good validity and reliability (Ko et al., 2005; Alizamar et al., 2018). According to (Mak et al., 2014: 1238), 'CIAS-R reported strong internal consistency, and satisfactory convergent validity as evidenced by its significant correlations with Young's (1998) Diagnostic Questionnaire (YDQ) and Morahan-Martin and Schumacher's (2000) Pathologic Use Scale (PUS).'

Research Study

The research was conducted as quantitative research (Kaliba, 2020).

Research objectives

The objective of the presented study is to explore the risk of Internet addiction occurring in university students in the Czech Republic.

The partial objectives of the research are to compare differences between the behavior of men and women, differences between individual age categories of students, between the forms of studies (full-time and part-time) and differences between study fields (with a special focus on students majoring in teaching).

Considering the research objective, the following four null hypotheses were proposed:

- H_{gender}: Internet addiction does not depend on the respondents´ gender.
- H_{age}: Internet addiction does not depend on the respondents´ age.
- H_{form}: Internet addiction does not depend on the form of studies.
- $H_{orientation}$: Internet addiction does not depend on the faculty orientation.

Pilot Study

In order to verify the planned research procedure and the suitability of the chosen research tool, a pilot research was carried out. It involved 251 students of the Faculty of Education, University of Hradec Kralove (Ambrozova and Kaliba, 2020). Excellent internal consistency (*Cronbach's alpha* of 0.93) of the CIAS-R scale was achieved in our pilot research. This result was similar to that one reached by Chraska (2019) in his pilot study which focused on revealing Internet addiction of Czech university students, and which applied CIAS.

Research sample

We addressed officials of variously oriented faculties and universities in the Czech Republic, and we asked them to forward our questionnaire to students. 3,397 respondents participated in the CIAS-R questionnaire survey, the questionnaire was sent electronically. The research was processed within the framework of a dissertation thesis (Kaliba, 2020) and in line with the ethical code of the University of xxx, Czech Republic. The data were logically and optically checked. Some responses were excluded for such reasons as the incompleteness of data, or the non-university student status of some respondents. The final number of respondents was 3,366 (2,151 females and 1,215 males). Concerning its extent, our research study ranks among the largest in the Czech Republic and also worldwide (compare Moreno-Guerrero et al., 2020).

Concerning the gender, see Table 1 for the composition of the sample (almost 64% of females and 36% of males), which roughly corresponds to the general gender composition of the population of Czech university students (female university students represent approximately 60% of the total number of all students). A slight surplus of women in our sample can then be attributed to the traditionally higher proportion of women studying at Czech Faculties of Education. The involvement of this type of faculties was important for our research in the context of its objectives.

The respondents were both full-time students and part-time students from various universities in the Czech Republic. We monitored the distribution of the respondents based on the faculties studied and the faculties´ orientations. For simplification, we divided the faculties studied by our respondents into 6 groups according to their dominant focus. Our main attention was paid to students of faculties of education, who are therefore most represented within the sample structure (approx. 50%), and students of faculties significantly oriented on technological fields and directly oriented on informatics (approx. 29%). Roughly 21% of all the respondents represented the remaining types of faculties (those oriented on humanities, science, health service and medicine, economics and mathematics), see Table 1.

Gender	
Female	2151 (63.9%)
Male	1215 (36.1%)
Age	
19–25	2664 (79.1%)
26–35	355 (10.5%)
36–50	367 (10.3%)
Forms of studies	
Full-time form	2609 (77.51%)
Part-time form	757 (22.49%)
Faculties oriented on	
Education	1682 (49.47%)
Technology and informatics	985 (29.26%)
Humanities	253 (7.5%)
Economics and mathematics	67 (1.99%)
Science	212 (6.3%)
Health service and medicine	167 (4.96%)

Table 1: Baseline characteristics of the study population (*N* = 3,366), 2019–2020 (source: own calculation)

Limitation

Although the research sample can be considered as being very numerous also in the context of other studies, it cannot be considered as being representative due to its construction (almost 43% of the respondents were from the "home" university, and almost 50% of the respondents were from faculties of education). That is why the conclusions reached cannot be generalized. However, they can be definitely perceived as an important insight into the online risk behavior of the target group, and as a confirmation of the conclusions reached in a number of other research cases.

Data analysis

The IBM SPSS Statistics software was used analyze the collected data. On the basis of the Kolmogorov-Smirnov test, it was revealed that all the monitored data have the normal distribution. Levene's test for equality of variances revealed that this equality existed in case of all the monitored data.

To statistically analyze the needed relationships, we used the analysis of variance (ANOVA). The analysis of covariance (ANCOVA) with the respondents´ age as the covariate was carried out.

RESEARCH RESULTS

Within the framework of the acquired dataset, the CIAS-R scale showed a very high degree of internal consistency (*Cronbach's alpha* of 0.92).

Considering the sphere of Internet addiction, our respondents´ average score was 44.03. See Table 2 (*Means*, *SD*s, *Minimum* and *Maximum* scores).

Factor	Mean (Mean/Item)	SD	Min-Max
compulsive symptoms	8.28 (1.66)	2.81	5–20
withdrawal symptoms	8.95 (1.79)	2.99	5–20
tolerance symptoms	7.88 (1.97)	2.26	4–16
interpersonal & health problems	11.39 (1.63)	3.76	7–28
time management problems	7.51 (1.88)	2.38	5–20
CIAS-R score	44.03	11.38	26–104

Table 2: Summary of the CIAS-R data, 2019–2020 (source: own calculation)

Problems with overusing of the Internet are reflected in all diagnostic levels. The total score of the CIAS-R was significantly associated with the amount of the time spent on the Internet (see Table 2, tolerance symptoms).

The screen cut-off point of 63/64 and the diagnostic cut-off point of 67/68 for the CIAS-R were considered by Ko et al. (2009) to be the best cut-off points when evaluating IA in university students. However, in the monitored spheres we will present, referring to the cut-off points recommended by the authors of the original study (Chen et al., 2003; Ko et al., 2005) for adolescents, also the percentual representation of the respondents related to the screen cut-off point of 57/58 (for the reason of an easier comparison with other studies which have been already carried out).

Our research revealed 12% of the addicted when the 57/58 cut-off point was used, 6% of the addicted when the 63/64 cut-off point was used, and 3% of the addicted when the 67/68 cut-off point was used.

Results by gender

A significantly higher risk was revealed in males:

- 15.5% (applying the 57/58 cut-off point),
- 8.3% (applying the 63/64 cut-off point), and
- 3,9% (applying the 67/68 cut-off point)

(in case of females, the respective percentages were 10.6%, 5.4%, and 2.7%).

Using the ANOVA method, we analyzed the relationship between Internet addiction and the gender of the respondents. See Table 3 (*f-Mean* = females, *m-Mean* = males).

Factor	*F*-test	*f*-Mean	*m*-Mean
compulsive symptoms	1.88	8.23	8.35
withdrawal symptoms	3.57	8.88	9.06
tolerance symptoms	13.60*	7.98	7.72
interpersonal & health problems	40.34*	11.12	11.86
time management problems	41.28*	7.34	7.81
CIAS-R score	36.14*	43.26	45.38

Table 3: The CIAS-R data by gender (*$p < 0.05$), 2019–2020 (source: own calculation)

From Table 3 it is clear that males have a significantly higher risk of Internet addiction in the spheres of interpersonal problems, health problems and time management problems. Females are at higher risk in the sphere of tolerance symptoms.

Results by age

Referring to the age groups of the respondents, the 19–25 age group reached the average CIAS-R score of 45.3, i.e.:

- 13.7%, 6.5%, 3,5% resulting from the application of the 57/58, 63/64, 67/68 cut-off points.

The 26–35 age group reached the CIAS-R score of 42.1, i.e.:

- 11.3%, 4.5%, 2,3% resulting from the application of the 57/58, 63/64, 67/68 cut-off points.

The oldest respondents (aged 36–50) reached the CIAS-R score of 36.2, i.e.:

- 3.7%, 2.2%, 1.5% resulting from the application of the 57/58, 63/64, 67/68 cut-off points.

A correlation calculation was used to analyze the relationship between Internet addiction and the age of the respondents. See Table 4 (correlation coefficient *R*).

Factor	*R*
compulsive symptoms	-0.23**
withdrawal symptoms	-0.17*
tolerance symptoms	-0.22**
interpersonal & health problems	-0.18**
time management problems	-0.17**
CIAS-R score	-0.24**

Table 4: The CIAS-R data by the age (*$p < 0.05$, **$p < 0.01$), 2019–2020 (source: own calculation)

The data clearly confirm the statistically significant relation between Internet addiction and the age of the respondents. With advancing age, there is a lower incidence of Internet addiction.

Results by the form of studies

A significantly higher risk was revealed in full-time students:

- 13.7% resulting from the application of the 57/58 cut-off point,
- 6.6% resulting from the application of the 63/64 cut-off point, and
- 3,5% resulting from the application of the 67/68 cut-off point

(in case of part-time students, the percentages were 11.9%, 3.4%, and 2.1%).

Factor	*F*-test	full-time Mean	part-time Mean
compulsive symptoms	193.91**	8.53	7.39
withdrawal symptoms	242.09**	9.25	7.90
tolerance symptoms	362.67**	8.16	6.93
interpersonal & health problems	146.91**	11.69	10.35
time management problems	167.61**	7.71	6.81
CIAS-R score	145.16**	44.94	40.90

Table 5: The CIAS-R data by the form of studies ($p < 0.01$), 2019–2020 (source: own calculation)**

Using the ANOVA method, we analyzed the relation between Internet addiction and the form of studies. See Table 5.

As it is presented in Table 5, in all the monitored factors, full-time students show significantly higher scores of Internet addiction.

It is important to mention the fact that the mean age of the full-time students involved is 21.7, and the mean age of the part-time students involved is 33.04. However, it is also important to mention the fact that 28.5% of the part-time students belong to the same age group as the full-time students do (the age under 26). To reveal whether the statistically significant difference between the forms of studies is dependent on the respondents´ age or whether it is not dependent on it, we carried out the analysis of covariance (ANCOVA) in which the age was included as covariate. The obtained result confirmed that the form of studies has an impact on the CIAS-R score also in case when covariate (age) is considered, i.e. there is also a statistically significant difference ($p < .001$) in the CIAS-R score between the groups (the full-time one and the part-time one) when adjusted for the respondents´ mean age.

Results by orientation of faculties

Table 6 illustrates the relationship between Internet addiction and the orientation of faculties. The faculties (see section Materials and Methods; Research sample) are presented in the table as follows: F1 = faculties of education, F2 = humanities-oriented faculties, F3 = faculties oriented on technology and informatics, F4 = faculties oriented on science, F5 = faculties oriented on health service and medicine, F6 = faculties oriented on economics and mathematics.

Factor	*F* test	MeanF1	MeanF2	MeanF3	MeanF4	MeanF5	MeanF6
compulsive symptoms	4.64*	8.21	8.21	8.50	8.40	7.60	8.22
withdrawal symptoms	8.79*	9.01	8.78	9.15	8.49	8.26	8.14
tolerance symptoms	11.86*	7.92	7.60	8.08	7.71	7.38	7.91
interpersonal & health problems	11.06*	11.15	11.24	11.99	11.25	10.80	11.14
time management problems	7.42*	7.42	7.86	7.24	7.20	6.97	7.21
CIAS-R score	8.08*	43.34	44.12	45.25	44.23	42.47	43.42

Table 6: The CIAS-R data by the orientation of faculties (*$p < 0.05$), 2019–2020 (source: own calculation)

The highest CIAS scores are reached by students of faculties oriented on technology and informatics. Among the respondents studying these faculties, almost 14.5% of the addicted were found when the 57/58 cut-off point was applied, 7% of the addicted were found when the 63/64 cut-off point was applied, and 4.2% of the addicted were found when the 67/68 cut-off point was applied.

On the contrary, the lowest scores in Internet addiction are reached by students of faculties oriented on health service and medicine: 10.1%, 2.4%, and 1.2%, resulting from the application of the cut-off points of 57/58, 63/64, and 67/68, respectively.

Students of faculties of education reach lower total scores in Internet addiction when being compared with students of other faculties. Their scores are immediately behind those reached by medical students, namely:

- 11.2% resulting from the application of the 57/58 cut-off point,
- 5.6% resulting from the application of the 63/64 cut-off point, and
- 2,7% resulting from the application of the 67/68 cut-off point.
- As it is presented in table 6, the CIAS-R score shows a statistically significant difference of the Internet addiction related to the sphere on which the faculties are oriented.

Summary

Referring to the research results presented above, all four null hypotheses can be rejected.

DISCUSSION

The research objectives were successfully reached. Using the CIAS-R questionnaire, we examined Internet addiction in 3,366 respondents. We identified the level of risk of Internet addiction for university students, we compared the differences between Internet addiction of males and females, we compared the differences between individual age categories of students, differences between individual study forms and differences between students of differently oriented faculties. The main focus was placed on students of faculties of education, i.e. future educators of our youth.

Referring to our experience, university students are one of the most at-risk groups especially for the following reasons (cf. Ceyhan, 2011; Salehi et al., 2013; Skarupova and Blinka, 2015; Chraska, 2019, Ansar et al., 2020):

- University campuses usually provide easy, free and unrestricted internet access.
- The time period of university studies is often a period of transition to an individual being´s bigger independence, and it is also the first time in a young person's life when the parental control decreases.
- The Internet plays an important role in making new contacts, friendships, and even (sexual) relationships online.
- The cyber environment and its virtual reality play a role of a kind of "temptation" which enables an escape from the pressure caused by university studies requirements (homework, exams, etc.).

The above-mentioned reasons are reinforced with the CIAS-R questionnaire results reached in our research. In all the monitored groups of the respondents (grouped according to gender, age categories, study forms and orientation of faculties), two CIAS-R items related to the need of spending an increased length of time being online occurred most frequently ("I stay online longer than I intended, even when I planned to go online only briefly"; "I have found out that I have been spending more and more time online"). The third most frequently occurring item was that one associated with feeling of discomfort when the Internet was not available. The fourth most frequently occurring item was a futile effort to spend less time on the Internet.

According to some authors (Hayat, Kojuri and Amini, 2020: 83) 'high internet dependency can have negative consequences for students, especially regarding academic careers. Such students may tend to postpone their academic tasks.' Referring to the CIAS-R questionnaire results of our research into the most frequently occurring CIAS-R items, younger students admitted that spending time on the Internet has a negative impact on their study results (whereas students aged over 36 could see their health problems as a result of a negative impact of the Internet).

Applying the cut-off point of 57/58, we revealed that over 12% of our respondents were addicted. Applying the cut-off point of 63/64, we revealed that 6% of our respondents were addicted. Our research has revealed 3% of the addicted when applying the 67/68 cut-off point.

When working with self-assessment scales, the arbitrary rule of simple averaging (median) is often applied (an individual who exceeds the median value score increased by the standard deviation is considered to be problematic or severely addicted). Applying this rule, we would identify 616 heavily addicted persons in our sample, i.e. 18.3%. However, a relatively low application of this method in the process of data evaluation in international research makes such a comparison impossible. Any kind of comparison will always be affected by the fact that individual prevalence studies face methodological problems related to different methodologies, applied tools or cut-off points. For example, the analysis of studies (Chakraborty, Basu and Vijaya Kumar, 2010) which was carried out in the period between 1970 and 2010 and which used various instruments and populations brings highly variable data oscillating between the values of 0.3% and 38% of the population addicted to the Internet. Nevertheless, we can compare our research at least with other research cases listed below:

- In the analysis published in (Chou and Hsiao, 2000), the authors report that the prevalence of Internet addiction among university students internationally ranges from 8% to 13%.
- Weinstein and Lejoyeux (2010) reviewed literature related to Internet addiction which was published between 2000–2009 in Medline and PubMed. They indicated prevalence rates varying between 1.5% and 8.2%. in the United States and Europe.
- The meta-analysis of 31 countries (Cheng and Li, 2014) revealed a global prevalence of 2.6%–10.9% of Internet addiction. This analysis used multiple search strategies in an attempt to retrieve all empirical reports from 1996 to 2012 that adopted the Young Diagnostic Questionnaire or Internet Addiction Test for assessing generalized IA.
- The recent Chinese studies (Shen et al., 2020; Shen et al., 2021) on 8,098 college students in Hunan province, China, using CIAS-R and applying the criterion with the cut-off point of 63/64, reported the prevalence of internet addiction around 8% in these Chinese college students.

Our results of the research related to gender factors correspond to studies showing a higher prevalence of Internet addiction in men than in women (Poli, 2017; Li et al., 2018; Milkova and Ambrozova, 2018; Hinojo-Lucena et al., 2019; Grover et al., 2019; Hayat, Kojuri and Amini, 2020).

Age has got proven to be a factor that positively correlates with the sphere of the risk of Internet addiction. Similarly, to other

research studies (Hsieh et al., 2018; Grover et al., 2019; Chiu, 2019), our research confirmed that younger respondents have higher risks of Internet addiction; with advancing age there is a lower incidence of Internet addiction.

In the Czech Republic, university teachers commonly use a virtual learning environment to make study materials available for both full-time students and part-time students, and for assigning their tasks. Discussions made by students of both the forms of studies are also similar. However, our research shows that the form of studies is a significant intervening variable. This would not be surprising if this finding got proven to be dependent on age. However, age dependence was not proven (see section Research Results). Therefore, it can be only assumed that work commitments and mostly family responsibilities of part-time students do not allow them to spend too much of their non-study time on the Internet (see section Research Results, Table 2 - "the total score of the CIAS-R was significantly associated with the amount of time spent on the Internet").

Related to the type of faculty studied, the highest levels of Internet addiction were revealed in students of faculties oriented on technology and informatics. The lowest levels of Internet addiction were revealed in students of faculties oriented on health service and medicine (cf. Zhang et al., 2018). Students of faculties of education generally reach a lower score in the overall level of Internet addiction compared to students of other faculties. 'This can be caused by specific features of teacher training.' (Chraska, 2019: 562) The number of other studies dealing with this group of students is not high, but referring to the data available (Demirer, Bozoglan and Sahin, 2013; Chraska, 2019), we can claim that the level is comparable. Personal experience that the students of faculties of education have with Internet addiction is a topic that seems very important, especially with regard to their future teaching career and their role in prevention of risky behavior, or specifically in prevention of Internet addiction.

The sphere of risky behavior of current university students in cyberspace remains an issue with high potential for further research. This issue definitely requires professional interdisciplinary discussions, which can result in outputs that can practically help the target group to face the identified problems. We fully agree with the following opinion presented in a recent paper (Zenebe et al., 2021: 9): 'As internet addiction becomes an evident public health problem, carrying out public awareness campaigns may be a fruitful strategy to decrease its prevalence and effect. Besides to this, a collaborative work among stakeholders is important to develop other trendy, adaptive, and sustainable countermeasures.' In introductory sessions of our academic courses, we draw our students´ attention to the danger of internet addiction and to problems associated with this issue. Our doctoral students and colleagues are presented with our experience and our research results within the framework of various discussions focused this issue.

Due to the worldwide COVID-19 pandemic, it is necessary to mention the fact that our presented data were collected before the first wave of the pandemic and the subsequent lockdown (the data collection was carried out between October 2019 and March 2020). It is more than likely that Internet addiction has increased due to various Covid-19 factors (limited direct social contacts above all). The data obtained from more recent research (e.g. Ansar et al., 2020; Brooks et al., 2020; Lin, 2020; Qiu et al., 2020; Ramiz et al., 2021) show that Internet addiction occurring during the lockdown could become an even more serious problem, especially in adolescents and young adults. Referring to the results achieved in the study research by Siste et al. (2020: 6), we can quote the authors, who claim that 'COVID-19 fear and prolonged quarantine period might have driven people to experience depressive and anxiety symptoms. Recreational online activities are often a mechanism to cope with anxiety and alleviate depressed mood'.

CONCLUSION AND FUTURE WORK

In our research, we focused on the level of Internet addiction in the university population. The paper presents a research case carried out within the framework of the elaboration of a dissertation (Kaliba, 2020). Referring to our research, we consider Czech university students´ Internet addiction to be very alarming. The research has revealed 6% of the addicted within our research sample in case of applying the 63/64 cut-off point, and 3% of the addicted in case of applying the 67/68 cut-off point.

The research proved a significantly higher risk in males than in females, and a significantly higher risk in full-time students than in part-time students. From the data obtained it is clear that younger respondents have higher tendency to Internet addiction than older ones, i.e. with advancing age, there is a lower incidence of Internet addiction.

Our research also shows that the type of faculty studied is a significant intervening variable. Students of faculties of education reach generally a lower score in the overall level of Internet addiction compared to students of other faculties. Namely, the average CIAS score reached by students of faculties of education is 43.34, i.e. 5.6% of Internet addicted students revealed by applying the 63/64 cut-off point, and 2.7% of Internet addicted students by applying the 67/68 cut-off point. This score is relatively lower but still alarming.

Referring to the obtained data, we assume that our future research activities which involve applying the CIAS-R questionnaire in the field of Internet addiction will focus on comparing the occurrence of Internet addiction in university students and in adolescents. We are also planning to carry out deeper research into Internet addiction of university students related to the form of their studies (i.e. the full-time form and the part-time form) and related to their profession.

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Full research paper

PERCEPTION OF THE STUDENTS OF THE MASTER IN TEACHER TRAINING OF THE UNIVERSITY OF LA LAGUNA ON TRAINING IN COMPETENCES FOR EDUCATIONAL GUIDANCE AND THE TUTORIAL FUNCTION

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ABSTRACT

The present work aims to explore the knowledge that the students of the Master's Degree in Teaching at the University of La Laguna have about the functions of educational guidance and their role as teachers and tutors. To this end, this paper presents a review of the role of educational guidance in a Secondary Education center and the role of the tutor. Teachers' perception of the educational guidance and tutorial function, its importance and difficulties, and the evolution of initial training until reaching the current Master's degree is also presented. In addition, a mixed methodology is used, focused on a documentary analysis of the Title Verification and the teaching guides, a focus group interview, and a questionnaire on the self-perception of students of the competences in tutoring and educational guidance. The results show that students consider that the Master's program does not include sufficient training with respect to their tutoring and mentoring functions. Finally, the conclusion is reached that the students do not consider themselves prepared to exercise the tutorial function and proposals are suggested to improve this training.

KEYWORDS

Educational guidance, initial teacher training, tutorial function, tutor teaching staff

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Highlights

- *The contents and competences included in the Master's Degree in Teacher Training related to the tutorial function are analyzed.*
- *The Master's Degree in Teacher Training does not include sufficient content related to guidance and tutoring in its teaching guides.*
- *The Master's Degree in Teacher Training students do not consider themselves prepared to exercise their functions as tutors.*

INTRODUCTION

Educational guidance is a fundamental aspect within the framework of essential actions related to the training of students in educational centers. The initial training in competences for educational guidance has been aimed primarily at counselors and guidance counselors. Very few subjects in the framework of teacher training have focused on the tutorial function and academic and professional guidance processes. In Spain, the Master of Secondary Education includes subjects related to guidance and tutoring in the generic module. But, from our point of view, this is insufficient. One of the main training shortcomings of teachers is related to the tutorial function (Álvarez-Justel, 2017; González-Álvarez, 2019; Lai-Yeung, 2014; Chan, 2010; Zaunstöck, et al., 2021). Nevertheless, this

training is key within the framework of the competences of the teaching staff (Baugh, 2018; Zyma, Lu and Vasko, 2015). Other studies have shown that part of the teaching staff is unaware of the functions of the counselor and their role in an educational center (Ceulemans, Simons and Struyf, 2012; Lam and Hui, 2010; Romito, 2019; Zaunstöck, et al., 2021).

This study focuses on the case of the University of La Laguna. We intend to know the perception of students in training regarding the relevance and competences attributed to the guiding and tutorial role of the teaching staff. For this, a mixed methodology has been used focused on the documentary analysis of the verification of the University Master's Degree in Teacher Training and the teaching guides of the specialties. In addition, a focus group interview was carried out and a self-perception questionnaire was administered for the acquisition of competences for guidance and tutoring.

Educational guidance in Secondary Education: a shared responsibility

Guidance can be understood as a continuous and systematic process of help, focused on the prevention and development of all people throughout life, in which different educational agents are involved (Holmberg, 2020). Its purpose is promoting the personal, professional and social development of the student, that is, their integral development.

Decree 23/1995 specifies four areas of intervention in the field of guidance that correspond to professional guidance, guidance in teaching-learning processes, attention to diversity and guidance for prevention and development. In Secondary Education, these tasks are carried out by the guidance departments, although they are not exclusive to this. These departments and the educational and psycho-pedagogical guidance teams will be responsible for coordinating and assisting the teaching staff to complete these tasks. The role of the teaching staff becomes especially important, since it is the one who, ultimately, intervenes more directly and continuously with the students (González-Álvarez, 2019; Torrecilla-Sánchez, et al., 2018; McFarlane, 2016; Jacobs and Struyf, 2013). In this sense, it is necessary to insist on the global and joint work that all members and agents of the educational community must exercise (Álvarez-Justel, 2017; Hui, 2002; Jacobs and Struyf, 2013; Li et al., 2017; Pérez-Jorge et al., 2016).

The role of the tutor teaching staff

The tutorial function can be defined as the set of educational guidance tasks carried out by teachers as a guide and accompaniment of students with the intention of enhancing their integral development and attention to diversity (Álvarez-Justel, 2017; Li et al., 2017; López-Torrijo and Mengual-Andrs, 2015; Pérez-Jorge and Leal-Hernández, 2012). It covers both administrative aspects and academic, professional and personal advice (Zyma, Lu and Vasko, 2015). The teaching work includes not only the teaching of the subject, but also the concern for its students, their personal evolution, and its impact on learning (Jacobs and Struyf, 2013; Li et al., 2017; Marland, 2002).

Regarding the training of teachers in the tutorial function, Zyma, Lu and Vasko, (2015) propose a series of phases for the acquisition of these competences. These phases are related to raising awareness regarding the role of the tutor, delimitation of areas of intervention, technification of the activity and the coordination of the tutorial competition. Other authors propose that the tutor must acquire skills related to the teaching team coordination (González-Álvarez, 2019), the development of the tutorial action (Álvarez-Justel, 2017) or attention to diversity (Alegre and Pérez-Jorge, 2006; González-Falcón, Coronel-Llamas and Correa-García, 2016), among others.

Teachers' perception of the educational guidance and tutorial function and its difficulties

Villar et al. (2018) point out that, although traditionally linked to the guidance department, teachers must also assume guidance processes. In this sense, they speak of conscious processes associated with guiding tasks, differentiating the following:

- Passive involvement: teachers get involved in the guiding task without prior preparation. Guidance is intuitive and teachers do not consider that their duties include guidance tasks.
- Active involvement: teachers act when there is a discrepancy between their perceptions and the directions followed by their students, following an active but not directive position. Present intentionality and foresight.
- Interventionist: programmed intervention, integrated into their teaching practice.

The tutorial function is an essential aspect of the guidance process that significantly affects the quality of education (Álvarez-Justel, 2017; Calderón-Garrido et al., 2019; Lai-Yeung, 2014; Moeti, 2016; Torrecilla-Sánchez et al., 2018). However, a part of the teaching staff does not consider guidance as part of their tasks, is reluctant to assume this task or performs it superficially (Hipkiss and Pernilla, 2018; Gold, 2010; Jacobs and Struyf, 2013; Lohrmann et al., 2008; Loynd, Cooper and Hough, 2005). Thus, part of the teaching staff maintains a negative view of the figure of the counselor or does not show a predisposition to collaborate with them (González-Falcón, Coronel-Llamas and Correa-García, 2016; Moeti, 2016; Loynd, Cooper and Hough, 2005; Ramírez and Torres, 2013; Schuermann, Avent Harris and Lloyd-Hazlett, 2018). However, other investigations concur in a more positive assessment of the Guidance Department and the tutorial function (Arfasa, 2018; Calderón-Garrido et al., 2019; Chan, 2010; González-Álvarez, 2019; López-Torrijo and Mengual-Andrs, 2015; Owino and Odera, 2014; Supriyanto et al., 2019). The variability of results around the image that teachers have of the guidance processes may have its origin in the ignorance of the role and functions of the guidance counselor (Ceulemans, Simons and Struyf, 2012; Lam and Hui, 2010; Romito, 2019; Zaunstöck, et al., 2021).

There are various difficulties when it comes to being able to carry out the tutoring functions, such as the shortage of time and resources, the low interest in assuming the tutoring and guidance tasks, as well as the scarce training received (Álvarez-Justel, 2017; Finney and Philpott (2010); González-Álvarez, 2019; Hipkiss and Pernilla, 2018;

Lai-Yeung, 2014; Lam and Hui, 2010; López-Torrijo and Mengual-Andrs, 2015; McFarlane, 2016; Owino and Odera, 2014; Zaunstöck, et al., 2021). These aspects can contribute to this negative vision. In this line, the need to adapt the initial training of secondary education teachers to the performance of tasks of tutoring and guidance stands out (Calderón-Garrido et al., 2019; González-Álvarez, 2019; Lam and Hui, 2010; López-Torrijo and Mengual-Andrs, 2015; Owino and Odera, 2014;).

Evolution of initial training for secondary education teachers

In the last fifty years, initial teacher training has been affected by continuous educational reforms that have affected training in the development of skills related to tutoring and guidance. In a synthetic way, we provide in Table 1, the evolution of secondary education teacher training within the framework of the development of specific competences related to guidance and tutoring.

Legislation	Training	Implications
General Education Law of 1970, specifically Ministerial Order of July 8, 1971	Certificate of Pedagogical Attitude (CAP)	It was taught in two cycles, one theoretical and the other practical. The beginning was a merit, finally, it became a requirement (exempt teachers and graduates in Pedagogy and Psychopedagogy). In force until the 2009/2010 academic year
Royal Decree 1692/1995	Pedagogical Qualification Course (CCP)	It had a theoretical-practical block and a practical one It was taught from the academic year 1996/1997 to 2004/2005
Royal Decree 118/2004	Teaching Specialization Title (TED)	It did not come into force
Royal Decree 1834/2008	University Master's Degree in Teacher Training for Compulsory Secondary Education, High School, Professional Training and Language Teaching	Currently in force and must be taken by students of any specialty for teaching in compulsory secondary education. Mandatory for pedagogues and teachers who want to be educational counselors

Table 1: Evolution of training in didactic and pedagogical competences of secondary education teachers, 1970–2020

The validity of the current master's degree for the specific training of secondary education teachers, makes it necessary to approach such training in depth and in greater detail. Regarding the structure of the degree, we must specify that it has a generic module (three compulsory subjects), a specific one (four electives) and the practicum.

In the Resolution of February 6, 2015 of the University of La Laguna, on the design of the Master of Teacher Training title, the specialty of Educational Guidance is presented. In this Resolution, this specialty shares subjects with the rest of the specialties in the generic module.

However, the Guidance Professional Associations, the Conference of Deans of Education and other groups of the educational community requested for this specialty to have 60 specific training credits. Thus, the Master was modified to allocate the credits of the generic module to competences of the guiding function. In the Resolution of July 19, 2018, the Educational Guidance Specialty is presented separately from the other specialties.

At this point, it is essential to identify the knowledge, beliefs and self-perceived expectations of the students of the different specialties of the University Master's Degree in Teacher Training in relation to the competences in the field of mentoring and guidance.

MATERIAL AND METHODS

In order to obtain contrasted information from different sources, a mixed methodology was chosen, using both qualitative and quantitative data collection instruments and techniques. Thus, compensating for the limitations inherent to the restriction to only one of the methodologies, strengthening thus the interpretation of the results (Creswell and Plano Clark, 2011; De Lisle, 2011).

Main goals

For this study, the general objective was to explore the knowledge that the students of the University Master's Degree in Teacher Training have on the role of tutoring and educational guidance and the role of teachers in the exercise of it.

From this, the following specific objectives emerge:

- Identify the competences related to academic tutoring and guidance for teachers included in the master's study plan.
- Knowing the perception of students about the level of acquisition of skills in the field of guidance and tutoring.
- To inquire about the importance attributed by the students of the master to the guidance and tutoring developed by the educational guidance departments of the centers, as well as to the role of the teaching staff.

Specific goals for using qualitative/quantitative methods.

To know if the findings of the focus group coincide with those expected after the analysis of the title check and the results of the questionnaire.

Participants

The data and characteristics of the sample that participated in the study are presented.

The sample of this study was drawn from among the students enrolled in the University Master's Degree in Teacher Training for Compulsory Secondary Education, High School, Professional Training and Language Teaching at Universidad La Laguna in the 2019/20 academic year (see Table 2). Therefore, non-probability sampling was used, specifically, convenience sampling.

Specialty	Total
1 Economy, business and tourism	22
2 Biology and Geology	22
3 Mathematics	21
4 Humanities (Geography, History and Philosophy)	24
5 Language and Literature (Spanish, Latin and Greek)	22
6 English	22
7 Drawing, Design and Plastic Arts	22
8 Physics and Chemistry	22
9 Professional modules (industrial processes,	22
computing, communication, health)	15
10 Other foreign languages (French, German, Italian)	22
11 Physical education	10
12 Music	22
13 Technology	22
Total	**268**

Table 2: Students enrolled in the Master's degree by specialty in the 2019/2020 academic year, 2019-2020 (source: own elaboration)

In the study, 22 students from the specialty of Educational Guidance were excluded, with the intention of knowing the training in guidance of specialties other than this one. From the initial sample of 246 students and after eliminating the incomplete questionnaires, there was a valid sample of 79 students. Participation in the study was voluntary.

Regarding gender, 44 women (55.7%) and 31 man (39.2%) answered the questionnaire, 4 students (5.1%) identified with another gender.

The mean age of the sample was 30 years (SD = 7.62), varying between 22 and 59 years. To achieve a more balanced distribution of the sample, two age groups were established; younger than 29 years (59%) and older than 29 years (41%) (see Table 3).

Age	Frequency	Percentage
Up to 29 years	46	59%
Over 29 years	32	41%

Table 3: Age by categories of less or more than 29 years, 2019–2020 (source: own elaboration)

Regarding the chosen specialty, the majority of students enrolled in Chemistry (12.7%) and Humanities (geography and history and philosophy) (11.4%). See in Table 5 the distribution for the rest of the specialties.

Studies	Total
Physics and Chemistry	10
English	7
Biology and Geology	14
Design and Plastic Arts	7
Professional Modules (Industrial Processes, Information Technology, Communication and Healthcare)	7
Music	6
Humanities (Geography and History and Philosophy)	9
Technology	5
Language and Literature (Spanish, Latin and Greek)	6
Foreign languages (French, German and / or Italian)	2
Math	4
Physical education	2
Total	**79**

Table 5: Distribution by specialties of the Master, 2019–2020 (source: own elaboration)

Focus group interview participants

In this case, convenience sampling was also used. A total of 5 students who had not responded to the questionnaire participated voluntarily in the focus group. Specifically, 1 student and 4 female students of the following specialties of English, Biology and Geology and Physical Education.

Techniques and Instruments

Questionnaire

In this work, an adapted version of the Torrecilla-Sánchez et al. (2018) questionnaire was used, called; Perception of one's own competences and professional development in tutoring and guidance (hereinafter PCDPTO), validated with a sample of 336 students from the University of Salamanca and Oviedo, following the procedures for the construction of attitude scales. For this work, the questionnaire has been adapted, being reduced to a total of 35 questions, 5 of identification and 30 about mentoring and guidance competences (see Table 6). A Likert-type scale design with 4 response levels is used, in which 0 reflects the minimum knowledge acquisition of competence or importance, and 4 the maximum value attributed. In addition, it included an open question, to collect other aspects or opinions that the participants wanted to express.

Block	Item Nº	Question
Sociodemographic	1	Age
	2	Gender
	3	Graduate / Bachelor
	4	Specialty
Assessment of the Master's degree students of the tutoring and educational orientation competences in three subscales: Degree of knowledge Degree of acquisition Degree of importance	5; 6; 7	To know and analyse the characteristics, organization and functioning of educational guidance services and the psycho-pedagogical assessment available at different levels of the education system (Preschool, Primary, Secondary School, Further Education).
	8; 9; 10	To identify requests, establish objectives and participate in the design of intervention plans in accordance with the results of the institutional analyses of schools and their related systems.
	11; 12; 13	To collaborate in the establishment of collaborative working structures with teachers and other members of the school community, as well as with other professionals working in schools.
	14; 15; 16	To inform and advise families on the teaching and learning process in relation to the personal, academic and professional guidance given to their children.
	17; 18; 19	To coordinate activities in the area or sector with all agents of the educational community and other services, paying particular attention to social services and health and labour services in order to provide coordinated activities.
	20; 21; 22	To know and assess psycho-pedagogical diagnostic techniques.
	23; 24; 25	To evaluate interventions carried out and identify changes to improve them.
	26; 27; 28	To know how to apply comprehensive training programmes for students.
	29; 30; 31	To know about interaction and communication processes in the classroom to be able to tackle and resolve potential problems.
	32; 33; 34	To know and use some basic digital tools to be able to use them in orientation tasks and tutoring and to develop the functions of tutor.
Open question	35	To know and analyse the characteristics, organization and functioning of educational guidance services and the psycho-pedagogical assessment available at different levels of the education system (Preschool, Primary, Secondary School, Further Education).

Table 6: Questionnaire structure (source: own elaboration)

Documentary analysis and focus group interview

For the qualitative study, a documentary analysis and a focus group interview were carried out.

As a strategy for documentary analysis, conceptual cartography was used, based on the search and analysis of information to understand or build a concept (Tobón, 2017). In this case, it has allowed us to delve into specific aspects of the tasks related to the tutorial function of the teaching staff. The competences of the Verifica of the University Master's Degree in Teacher Training (Universidad de La Laguna, 2014) and the teaching guides of its specialties were analyzed. The analysis has been carried out based on the tasks assigned to the tutorial function of the teachers. For this purpose, the competences that appear in the Verifica del Título and the teaching guides of the different specialties have been analyzed, identifying the tasks of the tutor teaching staff according to the subject and the type of content. The areas analyzed were; a) family counseling; b) personal and professional guidance for students; c) tutorial action and d) attention to diversity. The data collected in this analysis has been organized in a table. This content has been compared to each other and has also been compared to the guidance functions that teachers can perform.

The focus group interview allowed collecting the opinion of the participants, as well as identifying the factors that influenced the formation of said opinion (Rogel-Salazar, 2018).

The focus group interview sought collecting the opinion of the

participants the participants, as well as identifying the factors that influenced the formation of said opinions. Focus groups interviews are more structured than other types of group interviews and allow to uncover a wide range of perceptions and attitudes related to a certain topic, in this case, the Master's Degree training in tutorial functions. (Coreil, 1994).

In this sense, it has been considered an adequate method to collect useful and relevant information on the assessment made by students of the training received in a tutorial function. Table 7 shows the dimensions and categories established, as well as the proposed codes.

As previously described, it is a complementary mixed methodology study. This is a complementarity between the qualitative and quantitative methodologies that other researchers have used (Correa, 2016; Pérez-Jorge, et al., 2020) in studies with certain similarities to the present.

Dimension	Category	Code
Orientation department	Importance	[DO.]
	Role in the educational center	
	Knowledge about their functions	
Training	Training in the tutorial function	[FORM.]
	Guidance role training	
Tutorial function	Features	[TUT.]
Proposal	Improved training in tutorial function	[PRO.]
	Improved training in educational guidance	

Table 7: Qualitative data analysis dimensions, categories and codes (source: own elaboration)

The Guidance Department dimension [DO.] refers to the knowledge of the Department's functions, its role, and its importance. The dimension Training [FORM.] refers to the training received in the Master, in the field of the tutorial and guidance function. The dimension of Tutorial function [TUT.] corresponds to the functions and tasks of the tutorial function and the Proposed dimension [PRO.] refers to the improvement proposals of the participants to improve their training.

The focus group interview began with the presentation of the fictitious case of a Master's student who got a place in the competitive examinations and began her work in an institute as a teacher of the subjects assigned to her and as a group tutor. Specifically, the situation presented is as follows: 'Lucía graduated from the Master's Degree in Teacher Training at the University of La Laguna a couple of years ago. She has been preparing for the oppositions and has just passed them, getting a place in an institute on the island. On her first day, they inform her that this course has assigned her a group to act as a tutor, in addition to teaching her subject. Do you think that the training that Lucía has received will allow her to be a good tutor? Why?'

The focus group interview lasted 45 minutes. Subsequently, the transcription was carried out for the analysis of the responses.

Analysis of data

For the documentary analysis, the information collected from the teaching guides and Title Verification was organized in a table according to the following areas "guidance function", "module", "subject" and "competence". Thus, it can be clearly seen which subject included the competence related to educational guidance and to which module it corresponded.

The analysis of the quantitative data was carried out with the Statistical Package for the Social Sciences (SPSS) version 25.0. Tests were carried out; a) reliability analysis of the questionnaire; b) analysis of the underlying structure of the questionnaire; c) exploratory descriptive analysis of the questionnaire dimensions and d) analysis of intergroup differences. For this, the Kruskal-Wallis test was used to determine the existence of differences between the dependent variables and the established factors and between factors.

The qualitative data analysis was carried out through the Atlas.ti 8 program. The focus group transcript was coded, establishing dimensions (Guidance Department, Tutorial Function, Training and Proposal) and attributing codes to it ([DO.]; [TUT.]; [FORM.]; [PRO.]).

RESULTS

Results of the documentary analysis

The analysis of the Title Verification and the teaching guides of the fourteen specialties is presented in Table 8.

Regarding the family counseling function, two competences were found, related to counseling and collaboration with the family in the teaching-learning process of the students.

Regarding the function of personal and professional guidance, three competences were found referring to the ability to carry out the teaching-learning process taking into account diversity. And also knowing how to apply resources to carry out tutorials and academic and professional guidance in a collaborative way.

Likewise, in relation to the tutorial action function, two competences were found, which coincide with those of the previous function; apply resources to develop tutoring and academic and professional guidance in a collaborative way.

Finally, in relation to the function of attention to diversity, five competences were found; ability to make proposals for the acquisition of intellectual and emotional skills; attention to diversity, participate in the elaboration of the Educational Project of the center considering the attention to diversity; develop the teaching-learning process attending to the diversity of the classroom and guiding the students; know the characteristics of the students, motivations and context; specify a curriculum adapted to diversity and learn about the personality development process and learning problems.

Guidance function	Competence
Family counseling	Inform and advise families about the teaching and learning process and about the personal, academic and professional orientation of their children.
	Acquire social skills in relationship and family orientation.
Personal and professional guidance to students	Plan, develop and evaluate the teaching and learning process promoting educational processes that facilitate the acquisition of the competences of the respective teachings, taking into account the level and previous training of the students as well as their orientation, both individually and in collaboration with other teachers and professionals of the center.
	Know and apply information resources and strategies, tutoring and academic and professional guidance.
	Design and carry out formal and non-formal activities that contribute to making the center a place of participation and culture in the environment where it is located; develop the tutoring and guidance functions of students in a collaborative and coordinated manner; participate in the evaluation, research and innovation of teaching and learning processes.
Tutorial action	Know and apply information resources and strategies, tutoring and academic and professional guidance.
	Design and carry out formal and non-formal activities that contribute to making the center a place of participation and culture in the environment where it is located; develop the tutoring and guidance functions of students in a collaborative and coordinated manner; participate in the evaluation, research and innovation of teaching and learning processes.
Attention to diversity	Prepare proposals based on the acquisition of knowledge, skills and intellectual and emotional aptitudes.
	Identify and plan the resolution of educational situations that affect students with different abilities and different learning rates.
	Participate in the definition of the educational project and in the general activities of the center according to criteria of quality improvement, attention to diversity, prevention of learning problems and coexistence.
	Plan, develop and evaluate the teaching and learning process promoting educational processes that facilitate the acquisition of the competences of the respective teachings, taking into account the level and previous training of the students as well as their orientation, both individually and in collaboration with other teachers and professionals at the center.
	Specify the curriculum to be implemented in a teaching center, participating in its collective planning; develop and apply both group and personalized didactic methodologies, adapted to the diversity of students.
	Know the characteristics of students, their social contexts and motivations.
	Understand the development of the personality of these students and the possible dysfunctions that affect learning.

Table 8: Analysis of the Title Verification and the teaching guides (source: own elaboration)

Results of the self-perception of competences and professional development questionnaire in tutoring and guidance

Reliability analysis

Since it is an adaptation of the original test, we proceeded to assess the reliability of the new version of the PCDPTO, using the Alfa Cronbach internal consistency coefficient. This procedure was applied to the 30 items that made up the questionnaire, in its final version, obtaining a value of 0.968, which revealed an adequate consistency of the scale. This result is in line with the data obtained by the authors of the questionnaire, who indicated that the internal consistency value of their scale was 0.922 (Torrecilla-Sánchez et al., 2018).

Analysis of the underlying structure of the questionnaire

To determine the metric properties of the PCDPTO questionnaire, a principal component analysis was carried out in order to determine the underlying structure of the test, establishing the maximum number of factors at 3, which responded to the dimensions established by Torrecilla-Sánchez et al. (2018) (degree of knowledge, degree of acquisition and degree of importance). The value of the KMO index of sample adequacy was 0.895, which justified proceeding to the factor analysis. Bartlett's sphericity test was significant ($\chi 2 = 2784.09$, 435 gl, $p < .001$), which led to the factorization of the 3-component correlation matrix (coinciding with the 3 dimensions of the instrument), which explained a 68.38% of the variance.

Exploratory descriptive analysis of the dimensions of the questionnaire

Table 9 shows the descriptive statistics of the answers provided by the students for the degree of knowledge, degree of acquisition and degree of importance.

In general, it was observed that the master's degree students had very little knowledge of the functions of the teaching staff in relation to the guidance processes. In relation to the degree of acquisition of the competences, the scores were also low.

Regarding this dimension, the master's degree students highlighted in the open question the importance of practical training (R1 stated that "*There is a lack of more practical training*") and the need to continue training (R2 added: "*It is necessary, as in other professions, train constantly*").

Likewise, the students did not consider these functions particularly important.

In relation to the importance attributed, we also found

contributions (R2: "*I think we are poorly informed and prepared in relation to this important topic*"; R3: "*The aspect of being a tutor was discussed in some sessions, but I don't think it was give it the proper importance*").

No significant differences were found regarding the factors, in relation to gender, age or specialty of the Master.

The differences between factors can be seen in Table 10. The students perceived that they had little knowledge and had acquired few skills on the tutorial and guidance function, during the completion of the master's degree. The importance that the students attributed to them was not particularly outstanding.

Question	Degree of knowledge		Degree of acquisition		Degree of importance	
	Mean	SD	Mean	SD	Mean	SD
To know and analyse the characteristics, organization and functioning of educational guidance services and the psycho-pedagogical assessment available at different levels of the education system (Preschool, Primary, Secondary School, Further Education).	1.61	0.96	1.52	0.89	2.32	1.19
To identify requests, establish objectives and participate in the design of intervention plans in accordance with the results of the institutional analyses of schools and their related systems.	1.59	1.04	1.43	1.03	2.20	1.22
To collaborate in the establishment of collaborative working structures with teachers and other members of the school community, as well as with other professionals working in schools.	2.14	1.02	2.05	1.12	2.69	1.15
To inform and advise families on the teaching and learning process in relation to the personal, academic and professional guidance given to their children.	1.66	1.15	1.48	1.15	2.25	1.48
To coordinate activities in the area or sector with all agents of the educational community and other services, paying particular attention to social services and health and labour services in order to provide coordinated activities.	1.24	1.11	1.16	1.10	2.06	1.54
To know and assess psycho-pedagogical diagnostic techniques.	1.24	1.00	1.20	1.03	2.19	1.42
To evaluate interventions carried out and identify changes to improve them.	1.53	1.09	1.41	1.06	2.25	1.40
To know how to apply comprehensive training programmes for students.	1.69	1.18	1.64	1.14	2.49	1.34
To know about interaction and communication processes in the classroom to be able to tackle and resolve potential problems.	2.16	1.04	2.02	1.07	2.72	1.23
To know and use some basic digital tools to be able to use them in orientation tasks and tutoring and to develop the functions of tutor.	1.82	1.29	1.72	1.29	2.20	1.48

Table 9: Descriptive statistics of the answers of Degree of knowledge, Degree of acquisition and Degree of importance (source: own elaboration)

	N	Mean
Knowledge of competences (F1)	79	1.66*
Importance attributed to competences (F3)		2.33*
Acquisition of skills (F2)	79	1.56*
Importance attributed to competences (F3)		2.33*

: p-value < 0.05

Table 10: Descriptive statistics of Degree of knowledge, Degree of acquisition and Degree of importance (source: own elaboration).

Focus group interview results

The coding of the data and the grouping by categories allowed us to explore the content expressed about the aspects of the topic discussed. The key ideas of the discourse are supported by textual quotations. In this case, the four codes previously described were used.

Regarding the Guidance Department [DO.], The students stated that they had not received training on the organization and functions of the Guidance Department (P4 indicated: "*They haven't told us anything about guidance*"). Although they were willing to seek support in this (P3 highlighted: "*I have the guidance department, let them explain it to me*"). Regarding the functions of the Department, P2 pointed out: "*I suppose that it will be a bit like the psychologists of the institute, as they help when there are problems and give guidelines to teachers who have, for example, children with some NEAE or things like that. if you need help for a particular student that the counselors help you*"; P4 added: "*The Tutorial Action Plan*"; P3: "*Even people who want to enter the center, again, things like that. I mean students, they also guide and job guidance*".

Regarding Training [FORM.], the students considered that their training in a tutorial function was scarce (P2: "*I have not been given any type of preparation to tutor*"), although they highlighted its complexity (P2: "[…] *I find it complex to be*

a tutor, because you have to take care of many things, deal with students' problems"). In addition, they recognized that they would have to acquire this knowledge when they began to work (P4: "[…] *then they will have to teach us directly in situ, that is, in the center*").

In relation to the Tutorial Function [TUT.], they indicate various functions of the tutor teaching staff (P4: "*It represents them, right? The rest of the teaching staff too and it helps them in any situation*"; P3: "*It will also intervene between the group another teacher of some subject, well too*"; P4: "*And not only academically, but also emotionally*"; P1: "The *one who is going to communicate to the parents of that group will be that tutor*").

Finally, in Proposal [PRO.], the students proposed that training in a tutorial function be more present in the master's degree curriculum (P1: "[…] *some classes were for that too*") P2 added that they should be given "*Some guidelines*" regarding "*how we have to act, especially what are the problems that we have to cover in the tutorials, if we have to give them some kind of education in some sense, that is, if we have to impart some values or something like that, that they make an example of how a tutoring is carried out, for example, a situation "or that, for example," a counselor comes to give us a talk* […] ".

A summary of the results of the focus group interview can be found in the diagram below.

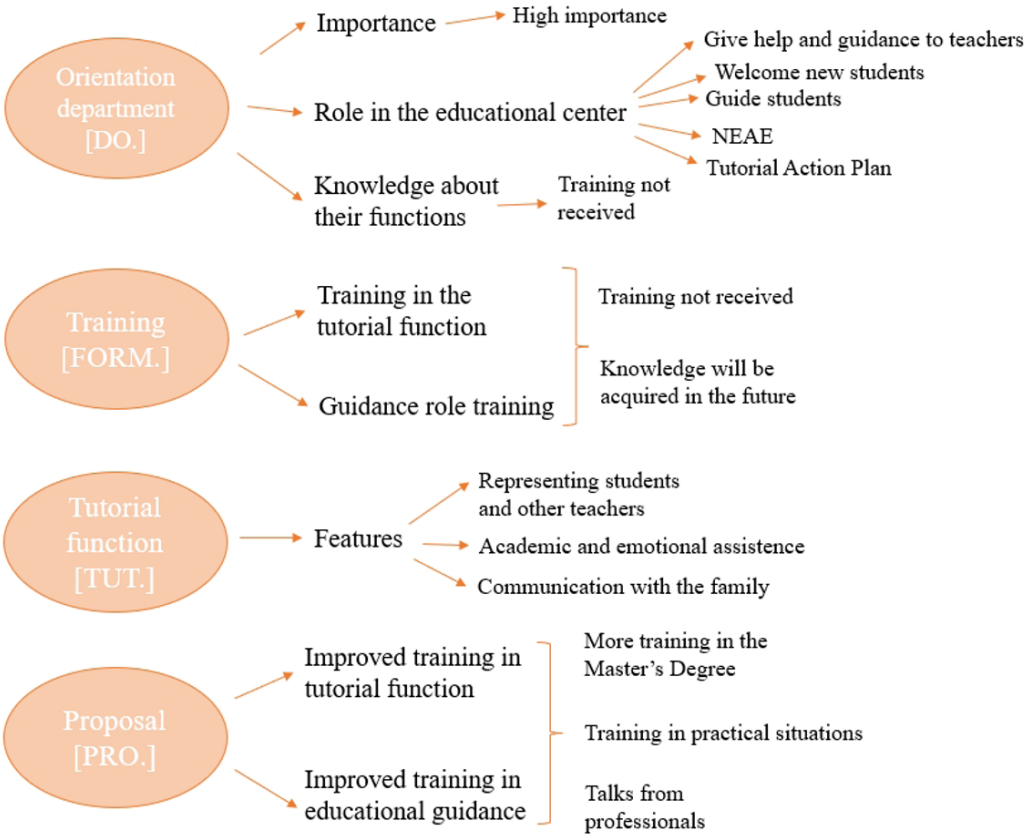

Diagram 1: Focus group interview's results (source: own elaboration)

Triangulation of data

In general, students believe that the Master's training lacks sufficient content and skills related to the tutoring function (*"we do not know what we have to do as tutors"*). Similarly, they and consider that it will be in their subsequent exercise when they learn these functions, asking other colleagues or seeking information independently (*"I would talk to the guidance team of the institute to give me guidelines and with other teachers"; "Improvise and ask and study and train ourselves"*). This coincides with the results of the questionnaire, in which in most of the items related to the functions of tutoring they value their degree of training as quite low. In this line, it is worth mentioning the few competences found in the Verifica del Título regarding the function of the tutoring faculty. We can appreciate that competences related to guidance and tutorial work are included, but these seem to be mentioned briefly, often within a broader list of competences.

Regarding the assessment made by the participants of the focus group on the role of the tutoring teacher, they point out among their functions to be the representative of their tutoring group and the teaching team, serving as a mediator between both (*"He or she will also intervene between the group and another teacher of a subject"*). In addition, they also indicate between their functions helping the students, offering support *"not only academically, but also emotionally"* and communicating with the family.

Among the competences of the Verifica del Título, those related to family counseling are included. However, the students who answered the questionnaire value being poorly trained in this aspect, an opinion that is reinforced in the comments of the open question of the questionnaire (*"I think we are poorly informed and prepared in relation to this important topic"*). Although they also attribute a low-moderate importance to it. In the focus group, this function was recognized as belonging

to the tutor teachers (*"The one who is going to communicate with the parents of that group is going to be that tutor"*), although it was given little importance.

Likewise, in the focus group, the participants expressed a predisposition to go to the Guidance Department, as well as to other teachers, to receive information and preparation in this aspect (*"The tutoring function… nothing. We haven't done anything"*; (*"The aspect of being a tutor was discussed in some sessions but I don't think it was given the proper importance"*). They consider it important to collaborate with the Guidance Department and to see the guidance counselor as qualified to provide this service (*"I am counting on the guidance department, let them explain it to me"*; "*It would be the first thing I would do; go to the guidance counselor*").

On the other hand, the Master's students value not having knowledge on how to coordinate the actions of the area with all the educational agents or other services and being poorly prepared for this, although they also give it little importance. The documentary analysis shows that no competence related to this aspect of the guidance function of the teaching staff is included in the teaching guides of the different specialties. In the focus group, neither this function nor any related one was mentioned as part of the tutoring faculty's work.

In addition, the students who answered the questionnaire consider that they have little training in how to identify demands and design intervention plans in response to the needs detected in the educational center. They give this aspect some importance and it can be considered partially included among the competences of the Master's Degree (*"Participate in the definition of the educational project and in the general activities of the center in accordance with criteria for improving quality, attention to diversity, prevention of learning problems and coexistence"*).

In the focus group interview, the participants considered that they had not received information on educational guidance and counseling services. In addition, the indicate that they had not been able to have contact with the Guidance Department or with any guidance counselor, which they valued as an aspect to be improved in their training, even suggesting that this contact be made in the Master's program (*"Well, a guidance counselor could come to give us a talk, for example, to explain what they do"*). In the questionnaire this item is given a moderate, but not high, importance.

In this line, the participants pointed out several functions of the Department, such as the Tutorial Action Plan, advice to teachers (*"I guess it will be a bit like the psychologists at school, as they help when there are problems and give guidelines to teachers who have, for example, children with some SEN"*) or even academic guidance (*"when you go to college too"*) or reception of new students in the center (*"Even people who want to enter the center, again"*). Although they consider that they know little about this topic (*"They have not told us anything about guidance"*; *"They mention that it exists and that you have to participate and work with them, but not how"*), they say they are willing to collaborate and seek support from the Guidance Department (*"I count on the guidance department, they can explain it to me"*; *"I would talk to the high school guidance team to get guidelines and to other teachers"*).

In addition, the participants consider that they have little knowledge of psycho-pedagogical diagnostic techniques and that they have acquired few skills in this area. The importance they attach to it is moderate. Although several competences related to attention to diversity can be found in the Verifica del Título, they do not include psycho-pedagogical diagnosis.

Another aspect for which students feel unprepared is the evaluation of the interventions carried out and being able to derive changes to improve them. However, it is given a moderate importance, this being the item in which the responses vary the most, which indicates that part of the student body gives it quite a lot of importance while another part considers it not very important. In the Master's Degree, we found a competence that could be considered related to this function (*"To plan, develop and evaluate the teaching and learning process, promoting educational processes that facilitate the acquisition of the competences of the respective courses, taking into account the level and previous training of the students as well as their orientation, both individually and in collaboration with other teachers and professionals of the center"*). But this is included in a broader list of functions.

Also, in the focus group interview, the participants mentioned attention to diversity, although in relation to the functions of the Guidance Department (*"they help when there are problems and give guidelines to teachers who have, for example, children with some SEN or things like that, and if they need help for a particular student, the guidance counselors will help them"*). In this aspect, in the open question of the questionnaire, they emphasize that they would like to receive more training (*"We have not received any specific training on how to adapt homework to SEN students or how to deal with them"*). This same request extends to other functions of the tutor teachers (*"communication with parents, guidance services or attention to people with special needs, practically do not occur"*).

In this line, the last question of the questionnaire shows the importance they attach to continuing training and seeking information to acquire this knowledge (*"From my point of view, it is necessary to make the training of trainers permanent and compulsory. It is not enough to do a degree and a Master's degree to know how to teach. It is necessary, as in other professions, to train constantly"*).

In order to improve this training from the Master's Degree in Teacher Training, the participants of the focus group pointed out as proposals for improvement that the Master's Degree should offer guidelines on *"how we have to act"*. That is, the functions that correspond to a teacher who is a tutor. They also suggest *"an example of how a tutoring is carried out"* or *"a guidance counselor should come to give us a talk"* to explain the functions of the Guidance Department and the relationship established between it and the rest of the teaching staff. Likewise, some of the comments in the last question of the questionnaire also pointed out the importance of receiving training more focused on practice (*"I think that in the Master's degree more training would be necessary in relation to real situations that we might encounter, for example: dealing with family members"*; *"I think that it would enrich this training and help the acquisition of competences to combine classes with practical work experience in schools"*).

DISCUSSION

The Master's Degree in Teacher Training has tried to collect training in content and skills of the specialization in the specific module and didactic strategies and knowledge about the operation of the school in the generic module. This training, as Husband (2015) point out, is essential for the development of competences related to student guidance. However, the assessment of the students (future teachers), regardless of their specialty, is that the master's training offer is insufficient for the acquisition of skills related to the tutorial function. The analysis of the degree curriculum showed a poor approach to the functions of the tutor. Thus, the results of the three sources of information used seem to point in the same direction.

In general, the students did not highlight the importance of these functions, despite recognizing the need to continue training to acquire them (R4) "[…] we must ensure that the training of trainers is permanent and mandatory"). This contradiction between being aware of the competences that as a tutor must possess, and the low importance attributed to the competences related to the tutorial function, show the presence of a high number of competences focused on didactic aspects. This leaves less time and resources to the rest of aspects, especially those related to the tutorial function, which is in line with previous research in which teachers were reluctant to assume these functions (Hipkiss and Pernilla, 2018). There is little appreciation of the tutorial function and there is a tendency to identify the teaching functions as something closer to curricular teaching (López-Torrijo and Mengual-Andrs, 2015).

The students who participated in the focus group interview recognized the functions of the Guidance Department in relation to the Tutorial Action Plan, advising teachers, academic guidance or welcoming new students. They also consider that these functions were specific to the Departments of Guidance and not so much of the tutor teaching staff. In this sense, P3 stated: "It would be the first thing I would do; go to the counselor or counselor". This positive perception of the Guidance Department coincides with previous studies (Calderón-Garrido et al., 2019; González-Álvarez, 2019). Studies such as those (Ceulemans, Simons, and Struyf, 2012; Romito, 2019; Supriyanto et al., 2019; Zaunstöck, et al., 2021, have shown that the lack of training on educational guidance and counseling services could be the reason for identifying the tutorial and guidance function as something alien to the competence profile of teachers. In any case, a lack of knowledge of the functions of the centers' guidance services and of the competences of the professional profile of teachers in terms of guidance and tutoring is revealed (Ceulemans, Simons and Struyf, 2012; Romito, 2019; Lai-Yeung, 2014; Lam and Hui, 2010; Owino and Odera, 2014; Zaunstöck, et al., 2021).

Students tend to attach more importance to competences related to teaching skills. Thus, they consider important and feel moderately prepared for the development of interaction and communication processes in the classroom; to use digital tools and to collaborate with other teachers and educational agents and with the development and application of learning methodologies. This profile is typical of the initial training offered in the generic module. However, they consider themselves poorly prepared to coordinate actions with other educational agents or services and to identify demands and design intervention plans in response to the needs detected in the educational center. They also gave both tasks a low and moderate importance. Coinciding with Finney and Philpott (2010), there is a lack of training in relation to counseling processes.

A part of the students was considered moderately prepared while another stated not having sufficient knowledge to apply programs for the comprehensive training of students. A part of the master's degree students considered the evaluation of the interventions carried out and the need to design improvement plans to be of little importance. They considered knowing little about psycho-pedagogical diagnostic techniques, giving a moderate importance to this aspect. This fact, together with the tendency to identify attention to diversity with the Guidance Department, considerably limits the preventive and guiding nature of the tutorial action. The Title Verify does not highlight competences related to psycho-pedagogical diagnosis, preventive intervention, or detection of needs in students.

In general lines, and coinciding with previous studies (Álvarez-Justel, 2017; González-Álvarez, 2019; Chan, 2010; Zaunstöck, et al., 2021), these results suggest that the participants in this study do not consider themselves sufficiently prepared to exercise the functions of the teaching staff, especially those related to guidance and counseling.

The results of this study should be taken with caution, as they respond to the reality of the University of La Laguna. The exploration of lines of work on the development of competences related to the tutorial function is necessary for the adaptation and improvement of the training of secondary education teachers who, considers the training received insufficient in relation to the areas addressed in this study. Also, more research using larger samples to study teacher training needs in guidance and counseling is also recommended.

CONCLUSION

This work has focused on the knowledge of the students of the Master in Teacher Training of the ULL on the field of educational guidance and the role of the tutor teacher. In addition, the competences included in the Master's have been explored. Specifically, the Master's includes several competences related to the tutorial function, in four key areas of educational guidance (family counseling, personal and professional guidance for students, tutorial action and attention to diversity). But these are insufficient and are included within from a broader list of competences.

Most of the participants in this study considered themselves poorly trained in competences for the tutorial function. Although they attributed importance to the Guidance Department, they were unaware of its functions in the educational center and did not feel prepared to collaborate with it. This view can be seen in the results of the questionnaire, but they are even more visible in the focus group, in which the participants highlight not only their lack of preparation, but also the absence of knowledge regarding what contents should be addressed in this preparation.

In general, the results of the questionnaire and the analysis of

the Verifica del Título are confirmed in the answers given by the participants in the focus group.

In conclusion, they state that they are unaware of the functions of the tutor teaching staff and have not acquired the necessary competences to carry out this work, attributing it a moderate importance. The functions for which they feel most prepared are those most related to the teaching task, which may indicate that they consider the role of the tutor (counselor and advisor) secondary to the role of teacher.

In future works, we should deepen in which are the basic contents of guidance and tutoring referring to areas of educational guidance that should be included in the Master and the best strategies for the training of teachers in these functions, so that they feel more prepared to exercise their function as tutor teachers. Likewise, the results of this work lead us to put forward a series of proposals to improve the training in the tutorial function of future teachers in relation to the tutorial function. First, we suggest promoting contact between specialties, including the Specialty of Educational Guidance, for example, through collaborative work. In addition, competences and contents specifically related to the tutorial function can be added to the teaching guides or contact with the Guidance Department can be encouraged during external internships.

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A REVIEW STUDY OF RESEARCH ARTICLES ON THE BARRIERS TO INCLUSIVE EDUCATION IN PRIMARY SCHOOLS

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ABSTRACT

This article presents a review of research studies related to the theme of barriers to inclusive education in primary schools. The basic data set for our study consisted of 27 expert articles selected from the Web of Science and Scopus databases according to clearly defined criteria. The result of the analysis provided findings that appear across all the texts. The research questions of this review study are what the barriers to inclusion in primary schools are, what we know about them, and whether there are ways to reduce them. We focused in more detail on the themes of discrepancies between legislation and practice, teaching barriers in the classroom, transdisciplinarity and inter-professionalism, and methodological specifics. In the analysis and discussion, we delineate the essential points of the individual articles by searching for similarities and differences among the texts.

KEYWORDS

Barriers to inclusion, educational opportunity, inclusive education (IE), primary school, special educational needs, overview study

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Highlights

- *Lack of relevant research on the topic of barriers in inclusive education as well as a research knowledge gap in terms of the formation and application of broader models and coherent theories, which might be applied more universally on the topic of IE.*
- *We are missing the mechanisms which make the implementation of the declared legislation realizable.*
- *The core of inclusive education is transdisciplinary, but we still see difficulties in cooperation between different professional identities.*
- *Inclusive education is a transnational issue; thus, the unclear terminology of inclusive education is reflected in the challenges of pedagogical practice globally.*
- *There is a lack of support (material, technical, and training) for the pedagogical staff worldwide; the pedagogues don't feel prepared well for work in the inclusive classroom.*

INTRODUCTION

For more than four decades now, the theme of inclusivity has been becoming increasingly relevant in global discourses on education. The principle of inclusive education (IE) is firmly grounded in discourses of human rights and social justice. In 1994, 92 countries of the world signed the Salamanca Statement, introducing the novel concept of IE for children and adults with special educational needs (SEN). The definition of inclusion in the Statement is quite broad and goes beyond the concept of disability to include 'Education for All' (EFA), a target specified by many regional and international organizations in various initiatives since Salamanca. The basic principle of inclusion is that all pupils should learn together whenever possible and that mainstream schools must respond to the diversity of individual pupil needs. To this end, schools must receive adequate support and services. Most international organizations involved in the field of education have adopted this comprehensive approach, including groups sponsored by the United Nations (UNESCO, UNICEF), the Council of Europe and the European Union (Hardy and Woodcock, 2015).

Participants at the World Education Forum in Dakar further recognized that 'the heart of EFA activity lies at the county level' (UNESCO, 2000: 10).

At present, a definitive shared framework for the concept of inclusion has not been agreed upon (Armstrong and Cairnduff, 2012; Tso and Strnadová, 2017), although a number of concepts have emerged. One indisputable finding is that the feeling of belonging to a school further correlates to greater life satisfaction and better academic results (OECD, 2017, 2018). The decisive factor towards securing real inclusion for all are teachers (Choi, 2018; Riley, 2017). Many educators have reported that they do not regard themselves as sufficiently prepared for their role as inclusion actors (Cologon, 2013; Soto-Chodiman et al., 2012), a feeling which is also reflected in the emotions they experience as inclusion is realized in pedagogical practice.

As the inclusion of pupils with disabilities has always been a prominent issue in general discourses on inclusivity (Clough, 1998; Davies, Garner and Lee, 1998), naturally, questions have arisen regarding the appropriate formulation and institution of educational policies along these lines (Barton, 1986); Davies, Garner and Lee, 1998). Strategies were once based largely on market competitive comparisons of the educational results of individual schools, yet this is an approach that has been found to make real inclusion impossible. Inversely, a number of studies have focused primarily on factors related to social inclusion (Mowat, 2019), featuring many key elements, such as a general sense of belonging (Riley, 2017), relationships within the school (Bossaert et al., 2013), as well as other affective factors that function as motivational and protective elements (Prince and Hadwin, 2013).

IE has been described as 'the process of educating children with disabilities in the regular education classrooms of their neighbourhood schools - the schools they would attend if they did not have a disability - and providing them with the necessary services and support' (Rafferty, Boettcher and Griffin, 2001). Inclusivity as 'Education for All' concerns not only the mere physical placement of pupils with SEN in the local school but also improving the conditions of social life in the school community and enriching the learning environment. Inclusion also concerns the specific way of teaching, which includes supporting all actors involved, thereby securing the benefits of such education (Haug, 2003).

As the results of our study show, inclusion is a global phenomenon, with studies showing tension in various environments worldwide between educational policy and the practice that individual inclusion actors seek to implement (Anderson, Klassen and Georgiou, 2007; Daly et al., 2016). Despite good intentions, the insensitive or ineffective implementation of educational policy in relation to inclusion can potentially lead to anxiety or even friction among all actors involved (Raffo and Gunter, 2008). Our review study aims to describe particular barriers inclusion actors have encountered and dealt with in different cultural contexts. Then, using this information, we seek to determine particular common denominators within the basic research discourse. Meeting both of these goals can help set more effective educational policies, improve teacher training, and point to directions for future research into IE.

Inclusive, internally differentiated education of pupils during compulsory schooling, has been shown as a highly desirable model (Idol, 2006), which not only enhances the cognitive development of all pupils but also has a positive effect on pupil socialization (Hunt and Goetz, 1997; Mowat, 2019). The authors of the present paper wish to use this text to support an inclusive philosophy that is both fairer and more beneficial for all pupils and students.

RESEARCH METHODOLOGY

The aim of our review study is to describe the research discourse in the field of barriers to IE within primary school. We will attempt to analyze the most frequently discussed topics in both content and methodology. Findings have shown that inclusion is commonly portrayed as problematic in some media and is perceived as such in the wider society (Brown 2020; Gilmour, 2018; Whitley and Hollweck, 2020and to highlight the particular case of inclusive education policy reform in the province of Nova Scotia. As with most other provinces and territories, inclusive education policy in Nova Scotia has broadened to include a lens of equity, with a focus on not only students with special education needs, but all students – particularly those most often marginalized by and within Canadian school systems. The article reflects on the first phase of the developmental evaluation process which took place prior to full implementation of the policy. Four interconnected key themes emerge: 1). Also, authors more accommodating to the concept of IE have indicated the many problems that exist in the media space (Jack and Manoeli, 2020; Murphy, 2015). As our goal is to review how the relevant professional literature describes the particular barriers that appear in the field of IE, as well as how IE as a whole is described in terms of barriers, we will leave aside discussions of media portrayals; although this is a very valuable research area, e.g. in terms of providing the public with accurate information regarding IE.

The research questions of this review study are what the barriers to inclusion in primary schools are, what we know about them, and whether there are ways to reduce them. To shed light on our research, we draw on the paradigm of action research (Zuber-Skerritt, 2001; Ketterer, Price and Politser, 1980). This emphasises the need to understand the status quo and discover the mechanisms that can lead to the desired positive change. Our research is also linked to change - we are looking for ways in which barriers to inclusion can be removed.

For our review study, we chose the search terms 'inclusion', 'primary school' and 'barriers'. The aim was to examine texts that deal either generally with the issue of inclusion in the field of basic education (especially at the first stage, i.e. ISCED Level 1), or more specifically with barriers that may be associated with its implementation. As our research target relates to the school environment, it was necessary to exclude from the search results texts directed toward other domains, e.g. STEM fields, the legal and health professions, other fields in the humanities, etc. A few texts, including the search terms that were completely unrelated to the research area, were also excluded from the analysis.

The search filter was set to the years 2017-2020. Since our analysis aimed to depict the current situation, we did not explore older texts. The texts were sourced from the Web of Science (WoS) and Scopus databases, which we chose as they feature the highest quality texts in terms of professional and scientific

excellence. If a text was indexed in both databases, we chose the version listed in WoS. A total of 21 texts were retrieved from the WoS database, along with another 6 from Scopus, thus, we worked with a total of 27 documents in the analysis. Exclusively research articles were included.

The review study is limited to the years 2017-2020 for two reasons: the first is that barriers to inclusion are well described in older literature or textbooks (Darrow, 2009; Lloyd, 20081997; Powell, 2015) and the aim of our study was not to extend the period of the studies reviewed and to petrify these findings, but to offer insights into current research approaches, methods, findings, and perspectives. The second is the qualitative focus of the study, which allows for detailed work only on a limited number of studies. Thus, the reduction to this time period fulfills both an updating and selective role so that the chosen approach is methodologically transparent.

We undertook both a qualitative and quantitative evaluation of the texts. The qualitative part consisted of the analysis of noteworthy findings and other information that facilitates a clearer understanding of barriers to the implementation of inclusion in primary education. All three authors of the present review study read all of the texts, following which the qualitative analysis was conducted. After the methodologically more subjective qualitative evaluation, a quantitative analysis was conducted. For each text, the sample size and its structure, methods, research tools, data processing methods, and location were determined.

We also originally intended to analyze the research questions of the articles but this was not successful since many articles (even empirical studies) did not work with explicit research questions at all. Similarly, not all the texts share a clearly defined research paradigm on which to rely. Thus, while for most of the articles it is possible to assume the prevailing constructivist presuppositions, in no text was it possible to identify them methodologically. For this reason, in the resulting table, findings regarding evaluations of the research questions are not featured at all.

In general, qualitative concepts prevailed (22 of the studies). A large part of the texts described research that employed a methodology that produced results that were not very acute or unambiguous, using methods such as thematic analysis, content analysis and/or semi-structured interviews; Interpretative Phenomenological Analysis (IPA), ethnographic methods, etc. were also represented. Our findings show that qualitative methods have usually been regarded as more appropriate in examining themes related to inclusion, as the concept is typically seen in terms of relatively broad and complicated phenomena. The fact that we do not have quality large-scale quantitative studies (6 in total, out of which 4 were purely quantitative and 2 mixed design) should also be emphasized. A few single and multiple case studies (3) were also represented.

RESULTS

The 27 studies included in our research were carefully analyzed by the three authors, who then agreed on the key messages of the individual studies. In addition to summaries of the findings of each study, the attached table in the appendix also shows the geolocation of the individual surveys (11 studies from Europe, 1 from America/ Caribbean, 4 from Asia, 6 from Australia, 5 from Africa) along with research methods (most often various forms of interviews - 21, questionnaires or tests - 10, and observations - 5). The sizes of the research samples were quite diverse, ranging from a set of 2,649 pupils to single cases and case studies. It is not possible to determine one dominant target group of research, although most often the research included teachers (16), pupils (5), and parents (5), as well as assistants, school principals, and administrators.

Research results have been mapped, documenting the experiences of more than a thousand teachers, three thousand pupils, and more than four hundred other inclusion actors. It can thus be argued that the presented results capture a relatively extensive, multiculturally diverse set of experiences at the time of the study, which has allowed the researchers to observe in a broader way, certain general trends regarding barriers to the process of IE in primary schools.

Discourses	Article
Discrepancies between legislation and practice	Alborno, 2017; Daly et al., 2020; Ebuenyi et al., 2020; Hodges et al., 2020; Keon, 2020; Materechera, 2020; Miles, Westbrook and Croft, 2018; Parey, 2022; Qu, 2019; Suc, Bukovec and Karpljuk, 2017
Educational barriers in the classroom	Alborno, 2017; Alderton and Gifford, 2018; Anglim, Prendeville and Kinsella, 2018; Hodges et al., 2020; Kerins et al., 2018; Martos-García and Monforte, 2019; Mowat, 2019; Mukhopadhyay, Mangope and Moorad, 2019; Sánchez, Rodríguez and Sandoval, 2019; Suc, Bukovec and Karpljuk, 2017; Tso and Strnadová, 2017
Transdisciplinarity as a challenge	Alborno, 2017; Anglim et al., 2018; Ebuenyi et al., 2020; Hankebo, 2018; Hodges et al., 2020; Imasaka et al., 2020; Kerins et al., 2018; Martos-García and Monforte, 2019; Mukhopadhyay et al., 2019; Ndhlovu and Varea, 2018; Overton, Wrench and Garrett, 2017; Quibell, Charlton and Law, 2017; P. A. Sánchez et al., 2019; Tso and Strnadová, 2017
Qualitative research designs with no ambitions to formulate more general theoretical hypotheses predominate investigations into IE	Alborno, 2017; Alderton and Gifford, 2018; Anglim et al., 2018; Daly et al., 2020; Ebuenyi et al., 2020; Hankebo, 2018; Hodges et al., 2020; Imasaka et al., 2020; Keon, 2020; Martos-García and Monforte, 2019; Miles, Westbrook and Croft, 2018; Mukhopadhyay et al., 2019; Ndhlovu and Varea, 2018; Overton et al., 2017; Qu, 2019; P. A. Sánchez et al., 2019; Suc et al., 2017; Tso and Strnadová, 2017

Table 1: Particular area and the relevant article (source: own thematic analysis)

Data analysis

Within our research framework, we processed the 27 texts using a combination of two methods: content analysis followed by framework analysis, which we used to examine the most general characteristics of the analyzed texts. In the appendix of this article is a table with selected data that we have chosen as relevant. We identified certain common structures that were found in a substantial portion of the analyzed articles. Four areas were identified as the most common and important. They are the result of the thematic analysis carried out. This is the core of the analytical review, which we focus on in a broader and deeper analysis below.

Discrepancies between legislation and practice

The OECD report (1999) argues that although there is a consensus in the international context on what comprises IE, the main barriers to implementing IE in practice show a combination of a lack of political will and an endless resistance to change.

The broad definition of IE enshrined in the Salamanca Declaration (UNESCO, 1994) and the Framework for Action (UNESCO, 2000) is reflected in the national legislation of many countries, especially the signatories of this declaration, e.g. Trinidad and Tobago (Parey, 2022), Australia (Hodges et al., 2020), South Africa (Materechera, 2020), and Great Britain (Alderton and Gifford, 2018). In most of the texts analyzed, a noticeable emphasis has been placed on specific national policy contexts (Alborno, 2017; Daly et al., 2020; Parey, 2022). The breadth of the internationally supported definition of IE must be reflected at the national level, albeit in various forms. In the 21st century, most countries cannot afford to claim that education should be of a purely exclusive nature or that people with a certain otherness should be segregated, as stated in Convention on the Rights of the Child - Article 2 (UNICEF, 1989) and Convention on the Rights of Persons with Disabilities - Article 24 (UN, 2006). This means that the idea of humanity as a social invariant represents a relatively broadly accentuated concept within the value framework of individual countries (Glass, 2001).

Still, a strong gap remains between the declared value framework of IE enshrined in national education policies and public attitudes (Alborno, 2017). We can see pressure supporting IE as a fundamental human right, but we can also feel considerable resentment from parents and the general public. They feel that any otherness hampers other pupils and delays their development, negatively affecting their educational outcomes (Ebuenyi et al., 2020; Keon, 2020). In the Irish context, these attitudes reflecting public antipathy have been termed 'soft barriers' (Cradden, 2021; Keon, 2020).

Teachers are thus placed in a situation in which they must liaise with parents, yet still emphasize a partnership-oriented and open approach that is often in sharp contrast to the value framework of parents (Hodges et al., 2020; Keon, 2020). This tension, often framed in terms of a 'mismanagement of public debate', is indicated as a strong negative aspect regarding inclusion in most of the studied texts (e.g. Ireland: Keon, 2020; United Arab Emirates: Alborno, 2017; Australia: Hodges et al., 2020; South Africa: Materechera, 2020).

Another manifestation of the conflict between legislation and practice is illustrated by the example of Trinidad and Tobago: 'The participants shared that the Equal Opportunities Act was the only piece of national legislation which secures the rights of children with disabilities with regards to inclusion in schools in Trinidad. They mentioned that, due to the absence of monitoring mechanisms, the implementation of this legislation was not strong.' (Parey, 2022: 569).

In practice, this means that different countries across continents (Trinidad and Tobago: Parey, (2022); Slovenia: Suc et al. (2017); United Arab Emirates: Alborno (2017); United Kingdom: Alderton and Gifford (2018); Ireland: Kerins et al. (2018); Australia: Hodges et al. (2020); Tanzania: Miles et al. (2018) have instituted an inclusive school legislation that sets a strong systemic and value framework only in some respects. IE is seen as intended and even desirable, and putting school legislation into practice is considered to be primarily the job of the school. Nevertheless, despite well-intentioned efforts, no mechanisms exist that would support the practical implementation and evaluation of an inclusive form of education in schools (Tannenbergerová, 2018).

Additionally, problems may also stem from a disparity between a country's cultural roots and its official IE policy (Qu, 2019). In Confucianism, which shapes the Chinese idea of a highly homogenized society, great emphasis is placed on harmony and order (Li, 2006). Whatever violates this order is perceived as negative, and the goal of education is to eliminate this contradiction (Qu, 2019). In such a situation, inclusion, which in itself entails the existence of otherness, is a concept very difficult to integrate culturally with the desideratum of stability and consistency.

When IE is viewed through a special pedagogical or human rights prism, it becomes necessary to clearly define the widest range of possible disadvantages and needs that a teacher may encounter in the classroom (Ebuenyi et al., 2020). If not, misunderstandings will arise, and in the worst case, segregation may occur in situations where it otherwise would not have occurred at all.

Educational barriers in the classroom

In addition to the aforementioned discrepancy between social and legislative norms, throughout the analyzed texts, specific barriers are described that stand in the way of successful inclusion. The emphasis on the feeling of the lack of help is critical. Inclusion is perceived as something that needs to be accomplished, but at the same time it always has the character of something extra, simply another requirement placed on the already overburdened school ecosystem. Results concerning IE have been closely related to the quality of teaching and learning (Cara, 2013). Educators and teaching assistants feel unprepared for an inclusive classroom environment, and also lack continuing professional development (CPD) regarding work with a heterogeneous classroom (Anglim et al., 2018; Mukhopadhyay et al., 2019; Smith and Broomhead, 2019). A total of five texts touched upon the theme of working with children and pupils with autism spectrum disorder (ASD) (Anglim et al., 2018; Hodges et al., 2020; Kerins et al., 2018; Tso and Strnadová, 2017). In other articles, we noted mentions

of unpreparedness for working with ASD or, alternatively, with a group of pupils with social, emotional, and behavioural needs (SEBN, a specific group which also includes pupils with Emotional and Behavioural Disorders) (Alborno, 2017; Kerins et al., 2018; Mowat, 2019; Mukhopadhyay et al., 2019; Suc et al., 2017).

Another interesting finding is the relationship between didactic methods and inclusion in schools, with a close connection shown between didactic methods and the results of IE (Martos-García and Monforte, 2019; S. Sánchez et al., 2019). In general, frontal methods that emphasize a Foucault division of power work less effectively with inclusion; in contrast, strongly activating and socializing projects (associated with teamwork along with shared practical and enjoyable experiences) have a relatively large potential to support IE in a number of ways (Alderton and Gifford, 2018). Keeping all of this in mind, exactly how should future and current teachers be prepared to face the challenge of working with heterogeneous school participants?

In addition to the weak support in terms of both undergraduate preparation and further education of pedagogical staff, in the analyzed texts, we noted other factors of a material nature hindering or preventing the adoption of an inclusive curriculum altogether. In some countries, education actors must work with outdated or dilapidated classroom equipment, or they must deal with the unavailability of supporting educational materials and other inadequate teaching resources (Mowat, 2019; Mukhopadhyay et al., 2019). One respondent of research conducted in South Africa's mainstream schools communicates these concerns: 'Inclusive education can work if classes are not too big. So, more educators need to be employed, because if the classes are as big they are now, where some teachers have 52 pupils, it's terrible; there is not even space in the class to move around. That's why I say the teachers are already negative about this inclusive education […]'. (Mukhopadhyay et al., 2019: 780). The common denominator of all these barriers is the lack of financial resources.

Transdisciplinarity as a challenge

Inclusion has always been characterized by a transdisciplinary approach, which is central to whether the inclusion process works or fails. Alborno (2017) indicates the large number of actors, i.e. inter-professionalism, who must be involved in the process of IE. It is necessary to ensure that all the participating actors are able to confer with each other and cooperate, that they respect each other and are able to pursue common goals. However, in the current overall climate, it seems such an ideal situation rarely occurs. Like the obstacles regarding classroom barriers, it seems that much more could be done to establish the transdisciplinary approach as a goal, both in theory and practice (Kerins et al., 2018). This objective has proven difficult to fulfill with regard to the diverse professional identities and the sometimes divergent views of individual actors involved in educational processes (Kerins et al. 2018). This situation often leads to less common pedagogical concepts and procedures (Quibell et al., 2017), or experimental research designs (Ndhlovu and Varea, 2018) based solely on one discipline to the exclusion of others.

The theme of transdisciplinarity in IE was analyzed by Suc et al. (2017). They found that teachers perceive cooperation with other professions (health professionals, psychologists, counsellors, social workers) very favourably and as an activity from which they benefit in practice. On the contrary, therapists perceived interdisciplinary cooperation within a much smaller scope, with their contact with educators primarily taking the form of information transfer. Therefore, certain basic issues, even the definitions of work expectations and responsibilities, must be dealt with in terms of interprofessional communication for effective inclusion to be implemented.

One finding which emerges from the research is the need to rethink the very meaning of transdisciplinarity in the context of IE, along with the implications of such an approach (Suc et al., 2017). Transdisciplinarity entails not only information transmission but also a process of adapting educational methods and approaches, examining socialization interactions in relation to school architecture, as well as many other sub-dimensions in which it will become necessary to search for genuine interdisciplinary and inter-professional cooperation (Overton et al., 2017; Sánchez, Rodríguez and Sandoval, 2019). Given the general results identified in current research, however, a degree of scepticism may be expressed as to whether teachers, teaching assistants, counsellors and other professionals are really prepared for such an approach (Alborno, 2017; Ebuenyi et al., 2020; Mukhopadhyay et al., 2019).

The fact that IE cannot be tackled at the level of a single worker or specialist but can only be achieved consortially is also evidenced in studies on people with disabilities (Hankebo, 2018; Martos-García and Monforte, 2019), specifically people with autism, whose inclusion is possible only through a cooperative synergy among several professions and professionals (Anglim et al., 2018; Imasaka et al., 2020; Kerins et al., 2018; Tso and Strnadová, 2017). Hodges et al. (2020) illustrate this theme in the relationship between social integration and school culture, emphasizing that it is not possible to achieve real IE without social pedagogical intervention.

Qualitative research designs with no ambitions to formulate more general theoretical hypotheses predominate investigations into IE

This research reality also reflects the situation described above in the reported results. Steps toward inclusive measures are usually of a partial nature, embracing a limited approach that does not go far enough towards resolving major issues such as teacher training, specialist interdisciplinary cooperation within the school environment, the provision of resources for assistants and aids, as well as other challenges which must be met for IE to be successfully implemented.

Qualitative research designs, showing no inclination toward formulating more general theoretical hypotheses, predominated our review study. Limited perspectives on broad problems, as well as examinations of isolated phenomena in specific situations, are explored, although sometimes in original or otherwise interesting ways. Generally, few precise measuring instruments are used to produce results that could later be related to specific government policy recommendations (Qu, 2019). If we ask why inclusion is failing, or at least is not

proceeding as robustly as it could, one of the reasons may be a lack of quantitative research that could influence specific policy measures, e.g. by creating information feedback loops between policy makers and on-the-ground inclusion actors. This practical failure at the school and classroom level is especially disheartening in situations where strong legislative initiatives have already been implemented.

Innovative and experimental qualitative methods produce extremely valuable knowledge and insights that cannot be obtained in any other way, often by giving a voice to the voiceless, in our case pupils and their teachers. We do not intend to portray a negative characterization of qualitative research tools, but only to draw attention to the fact that by their very nature they generally lead to a description of only one particular situation (Alborno, 2017) or the experiences of a unique group of people (Miles et al., 2018). We only seek to point out that often qualitative methods are not grounded in, nor do they lead to, broader frameworks of thought. It is imperative that isolated qualitative studies, which in our review are shown as prevailing in inclusivity research, be supplemented to a much greater degree by more quantitative research to obtain a comprehensive view of the special issues related to IE, including barriers to full implementation.

Although, as indicated, qualitative approaches predominate quite convincingly in our review, four studies were of a purely quantitative nature. The first was a Spanish paper by S. Sánchéz et al. (2019) in which over 2,500 learners completed a questionnaire, culminating in information about the possible construction of a valid and reliable tool that would facilitate work with easily measurable quantifiers. The second article focused on working with a questionnaire for principals and special pedagogical assistants (Kerins et al., 2018), while the third uses Spahiro-Wilk statistics to compare results from two groups (outdoor and indoor learners) of respondents (Quibell et al., 2017). In the fourth purely quantitative research work, the authors chose a study group and a control group for which multiple statistical techniques were used (Vallaba Doss et al., 2020). Only in two selected studies did the authors use a mixed design of quantitative and qualitative methodology (Materechera, 2020; Parey, 2022); in both cases, the authors combined in-depth interview methods and questionnaires.

In terms of qualitatively oriented research, the predominant method is interview (Tso and Strnadová, 2017), which are often supplemented by other research tools, such as focus groups (Ebuenyi et al., 2020; Hodges et al., 2020; Mowat, 2019; Mukhopadhyay et al., 2019; Suc et al., 2017), document analyzis (Alborno, 2017), observations (Alderton and Gifford, 2018; Hankebo, 2018; Imasaka et al., 2020; Overton et al., 2017) and/or various types of questionnaires (Baxter and Meyers, undefined/ed; Keon, 2020; Materechera, 2020; Parey, 2022; P. A. Sánchez et al., 2019). It is not possible to trace one predominant line in the interviews; in-depth IPA interviews (Anglim et al., 2018; Smith and Broomhead, 2019) and semi-structured interviews (Daly et al., 2020) appear as the two most prominent forms but also unstructured interviews (Ndhlovu and Varea, 2018) and in-depth interviews on mostly unspecified topics (Miles et al., 2018), specified in-depth interviews (Martos-García and Monforte, 2019) and small interviews conducted during observation (Overton et al., 2017) were featured in our review.

The review findings emphasize in particular the absence of a strong theoretical framework as the basis for the structured interviews or quantitative methods. As stated previously, although these studies often present interesting results, no unifying concept or theory is presented to form discussions or conclusions that may be useful in broader contexts. It has been established that inclusion in the school environment has been thoroughly researched and reflected upon using these methods. Researchers have put forth efforts to improve the current situation in the local or even regional context, e.g. (Ebuenyi et al., 2020; Mukhopadhyay et al., 2019), but a research knowledge gap remains in terms of the formation and application of broader models and theories that might be applied more universally, i.e. a set of basic principles from which to start. The situation is one in which the relatively large amount of data obtained through in-depth interviews (generally processed through IPA, but also otherwise), as well as semi-structured interviews, is too fragmented to form a deeper framework.

DISCUSSION

IE (Lindner and Schwab, 2020; Nilholm, 2021), as well as its challenges and barriers; Schuelka et al., 2020), represent a necessary research and application topic with a solid multicultural dimension (Hayes and Bulat, 2017; Ramberg and Watkins, 2020). The analysed studies show that this topic needs to involve many helping professions (Baird and Mollen, 2018; Walsh et al., 2020), whose approaches can help with a multidisciplinary and transdisciplinary approach. The topic of inclusion is not just a school issue but extends to the entire social environment of educators, pupils and students. An educationally adequate method that removes barriers will better integrate pupils or students with specific learning needs and transform the whole social discourse (Liasidou and Symeou, 2018). Therefore, it is an essential topic for all, as it leads to the systematic inclusion of differences in education (Mestenhauser and Ellingboe, 2005; Woodruff, 2020), which we consider an essential pedagogical issue (Eisenberg et al., 2021).

In our study, we have left aside topics that are purely focused on special educational issues because we believe that IE discipline as a whole is capable of taking a good stance on such problems and strives for this kind of inclusion through the education of future and current teachers (Felder, 2021; Florian, 2019; Paseka and Schwab, 2020). Similarly, we have left aside topics such as lack of material or economic security or lack of political support because what we want is to describe the changes that education can make (Nilholm, 2021).

An interesting aspect related to **internationally recognized legislation is that the theme of IE** has become topical across continents, which also reflects the transcultural nature of IE. We can currently observe the world‘s interconnectedness regarding this issue in the adoption of transnational documents on education (e.g. Salamanca Statement), although it is understandable that discourses of inclusivity continue to be

reflected in diverse ways in local policies within particular national contexts. As we have shown in the example of China (Qu, 2019), the promotion of IE may be associated with a certain value-environment or historical experience (Materechera, 2020). Despite national and regional idiosyncrasies, however, the basic scenery in which inclusion moves in the school environment is similar.

In the majority of the analysed texts, in terms of the **understanding of IE[1] the authors refer to the Salamanca Statement** (UNESCO, 1994). Nevertheless, the research shows a discrepancy between the declared broad understanding of the concept of IE and practice in specific schools, which for many reasons often do not receive adequate support (Anglim et al., 2018; Kerins et al., 2018; Mukhopadhyay et al., 2019). In such a situation, IE is reduced to the mere physical integration of pupils with special educational needs, i.e. the presence of these learners does not significantly affect the current course of the class and the educational process. 'If inclusion, for all its complexity, is such an important principle, why is it not a readily identifiable, stand-alone entity in policy? And why is inclusion so often only mentioned in passing in many policies?' (Hardy and Woodcock, 2015: 145). When international and, therefore, national legislation has already defined the conception and form of IE, then is it still now appropriate to ask how we will reflect and support this legislation in practice?

The inadequate training of pedagogical staff and consequential lack of experience of work with the specific needs of pupils has been identified in our research as a basic barrier standing in the way of IE (Anglim et al., 2018; Hodges et al., 2020; Tso and Strnadová, 2017). The literature identifies two possible, and in some ways antithetical, pedagogical approaches (Haug, 2017). Impairment-oriented teaching strategies focus on learner pathologies along with the particular personal difficulties associated with specific learning problems related to each condition. To support pupils and students and their particular needs, the school needs special educators who understand specific impairments as well as know how to compensate for them (Kreitz-Sandberg, 2015). The second approach, referred to as 'good all-round teaching' (Mitchell and Sutherland, 2014), is based on the principle that common teaching strategies, suitable for the majority of pupils, are also suitable for pupils with special educational needs. Each individual is different, thus as is the case with the general learner population, some pupils with SEN undoubtedly need more time, more repetitions, fewer tasks, and a slower progression, as well as, in some cases, adjusted performance expectations. Still, specific teaching strategies in this approach may be the same for all pupils regardless of their needs. In this case, the need for regular teachers in inclusive schools who are highly qualified in SEN, becomes even more imperative (Florian, 2014).

In the context of transdisciplinarity, Kearney and Kane (2006) distinguish two interpretations of inclusion: (a) inclusion based on a special education framework and special teacher expertise, and (b) inclusion as meeting the needs of all learners in similar ways irrespective of what those needs are. The divergence between these two approaches is clearly visible in the results of our review study. Responding to the widely agreed upon identification of transdisciplinarity as desirable and necessary, although difficult to attain, Haug (2017) describes an ideal state which, unfortunately, is not realized in practice. Without a transdisciplinary approach (Rausch, Bold and Strain, 2021), it is impossible to institute IE and to successfully promote the collaboration of individual social (Bellamy et al., 2013) and special educators who, working together, might promote inclusivity even more effectively (Weiss, Cook and Eren, 2020). In this respect, it can be said that it is the capacity for the various supporting professions to communicate with each other that builds a transdisciplinary approach (i.e. inter-professionalism), which in turn is the basic prerequisite for successful IE (Rausch, Bold and Strain, 2020).

The 'good all-round teaching' approach is supported by the results of one of the studies we analyzed (Anglim et al., 2018). This research provides clear confirmation that teachers with higher self-efficacy tend to adapt more readily to working with the individual needs of learners, with educator creativity also playing an important role. Schoolteachers need to trust that they are adept at teaching all children, an attitude also supported by being open to new trends in inclusive education (Florian, 2014) as well as continually seeking effective new approaches for their work. Last but not least, building relationships in the class collective among all actors involved is of fundamental importance. The support-group leaders in research conducted in Scotland (Mowat, 2019), as well as physical education teachers in an Australian study (Overton et al., 2017), identified good relations between teachers and children, as well as among pupils themselves, as an essential component of the educational process.

The selected research studies are characterized by diverse methodological approaches. In most cases, the authors tended towards qualitative design, although mixed or purely quantitative designs are also represented. The predominant research methods are interviews (semi-structured, unstructured), in-depth interviews, focus groups, and observations; some authors also used questionnaires and document analysis. The most common data processing method was shown to be interpretive phenomenological analysis, with open coding and narrative methodologies less often represented. The analyzed research studies do not provide empirically obtained data that could form a concrete comprehensive theory of IE. Research in the field of IE is too fragmented and lacks a theoretical basis to frame the topic.

The studies we analyze clearly show that inclusion is almost always a phenomenon that is perceived as beneficial and important for the future of education (Alborno, 2017), for the preservation and development of social justice (Hawkins, 2014; Wymer and Rundle-Thiele, 2017), as well as the effective overall functioning of school systems (Christensen et al., 2007; Ghosh and Galczynski, 2014). Regardless of whether inclusion concerns people with disabilities or other social groups, it is clear that a plan to overcome the four basic types of barriers

1 IE as "Education for All" involves not only the placement of pupils with special educational needs in the local school but also the conditions of social life in the school community as well as teaching and learning in the school. Inclusion then concerns how teaching is organized, the activities of teachers and students (support, involvement and participation) and the benefits of such teaching and learning (Haug, 2003).

mentioned above will require new tools for change as well as functional inclusive measures. Based on our review, we can recommend that the following steps be implemented:

- It is essential to provide effective and systematic training as well as material assistance for teachers as well as teaching assistants.
- It is necessary to devote attention not only to proclamatory documents but also to the support of specific school practices in terms of material, methodological and organizational functions.
- Despite the institution of various systemic measures, the quality of the teacher and the need for care for the individual pupil in a specific environment must still take top priority, which requires the preventive support of quality prosocial relationships among all actors in the educational process.
- It is necessary to support not only teachers but also all other actors in education towards specific pro-inclusive measures.
- Regular dialogue must take place among all professions involved in the process of inclusion in the school to ensure maximum cooperation. Individual actors should not feel that they are in competition with or against each other but should strive to create an environment that generates cooperation opportunities.
- It is essential to conduct long-term and systematic research in order to understand both barriers to IE as well as positive examples of inclusion in practice. The fact that there is no empirically-based unified theory of barriers to inclusion in the school environment significantly complicates the coordination and effectiveness of individual measures and interventions.
- It is necessary to institutionalize research in the field of inclusion in order not only to monitor the overall quality of education policies but also to evaluate the effectiveness and efficacy of individual approaches and support programs as well as to communicate that information at the international, national and institutional level.

CONCLUSION

In our review study, we have attempted to collect and compare findings on barriers to IE as well as other related issues. Equal and quality education should thus be guaranteed by the school system, which should facilitate the maximization of the full potential of all (Gordon, 2013).

In all the analyzed texts, we have found the general concurrence that inclusion is both supported in legislation (UNESCO, 1994; Alborno, 2017), and that teachers perceive it as something they should engage in. At the same time, however, the texts we reviewed articulate the view that schools and teachers do not have the support, education, competencies as well as other tools to effectively institute IE. Another widely discussed issue is the frequently reported scepticism of parents of the majority of society (Alborno, 2017) regarding the phenomenon of inclusion. It remains a major challenge to education systems as well as to individual schools to positively affect this social and cultural climate, as shifts in attitude over time will have a great influence on the successes and possibilities that real inclusion could bring. Four key types of barriers impeding successful IE can be identified as:

- Systemic - systemic barriers (Tannenbergerová et al., 2018) can be seen in terms of the inconsistencies between legislation and practice. The publicly declared values associated with international documents such as the Salamanca Statement form isolated elements with which other legally understood measures are not yet sufficiently linked.
- Personnel - barriers in the area of personnel can be seen mainly in the unpreparedness of teachers and other actors in education for a truly inclusive approach in IE. This barrier is relatively easy to remove through quality education with sufficient funding.
- Transdisciplinary – IE is simply not institutable at the level of a single profession but requires the broad cooperation of a large number of various types of specialists. Ensuring both their presence in schools and mutual cooperation can be perceived as a primary task.
- Methodological - as our review shows, while the theme of barriers to inclusion has been well researched in various local contexts, a lack of research grounded in broader concepts and theories persists. More generalizable results would allow the development of clear strategical frameworks, which in turn could foster the advancement of more effective measures to alleviate personnel and systemic barriers to school inclusion in the contemporary context (Booth, Ainscow and Vaughan, 2011; Symeonidou, 2017).

These four principles can be seen as the key concepts that emerge from this review study. By limiting them to the primary school setting, their clear relevance to that setting can be perceived. At the same time, we can assume that other school levels responding to IE may face similar issues that would be specific to the particular level of education (Buysse, Wesley and Keyes, 1998; Dymond et al., 2013; O'Brien, 2020).

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Article Title	Authors	Journal Title	Theme	Empirical / Theoretical	Sample	Methods	Research location
The Role of Inter-Professional Collaboration in Developing Inclusive Education: Experiences of Teachers and Occupational Therapists in Slovenia	Lea Suc, Boris Bukovec & Damir Karpljuk	International Journal of Inclusive Education	Interdisciplinary cooperation of teachers and occupational therapists as a prerequisite for inclusion.	qualitative study	9 therapists; 36 teachers	focus group, interviews	Slovenia
Descriptive analysis of School Inclusion Through the Index for Inclusion	Sergio Sánchez , Henar Rordríguez & y Marta Sandoval	Psychology, Society, & Education	Index of the development of inclusion in learning and cooperation in schools.	qualitative study	430 teachers; 112 schools	questionnaire	Spain
The "Yes … But" Dilemma: Implementing Inclusive Education in Emirati Primary Schools	Nadera Emran Alborno	British Journal of Special Education	What is the current status of the program "school for all" what barriers does this inclusive approach face?	multiple case studies	.	semi-structured interviews, observations, worksheets, individual educational plans, lesson plans, flyers for school events	United Arab Emirates
Rethinking Norms and Collectivism in China's Inclusive Education – Moving Teachers' Understanding Beyond Integration	Qu Xiao	Journal of Research in Special Educational Needs	Possible causes of the interpretation by teachers of inclusion as merely physical integration to offer a deeper understanding of how to advance inclusive education.	qualitative study	37 teachers	semi-structured interviews	China
Primary School Playgrounds as Spaces of Inclusion/ Exclusion in New South Wales, Australia	Sithembile Ndhlovu & Valeria Varea	Education	The aim was to analyze the role of playgrounds in the process of integration and inclusion.	qualitative study	2 school playgrounds	unstructured interactiive interviews	Australia
Inclusions and Exclusions in Rural Tanzanian Primary Schools: Material Barriers, Teacher Agency and Disability Equality	Susie Miles, Jo Westbrook & Alison Croft	Social Inclusion	Exploration of the current international policy context of inclusive education and its implementation by ordinary primary school teachers in mainstream schools in Tanzania.	qualitative study	15 teachers	in-depth interviews + observations of videos of lessons	Tanzania
The Professional Development Needs of Special Needs Assistants in Irish Post-Primary Schools	Pauline Kerins et al.	European Journal of Special Needs Education	This research examines the professional development (CPD) needs of special need assistant (SNAs) in Irish post-primary schools.	quantitative survey design	50 post-primary schools; process of stratified random sampling. 109 respondents, including 90 special need assistant (SNAs) and 19 principals.	2 self-completion questionnaires: (principal questionnaire, special needs assistant questionnaire), SPSS; content analysis for a structured analysis of data from open-ended questions.	Ireland
Pedagogies for Inclusion of Junior Primary Students with Disabilities in PE	Hannah Overton, Alison Wrench & Rbyne Garrett	Physical Education and Sport Pedagogy	Inclusion of pupils with disabilities into physical education classes (research question: What pedagogies do teachers draw upon to include junior primary students with disabilities in PE?)	qualitative study	3 teachers	semi-structured interviews, observations	Australia
The Self-Efficacy of Primary Teachers in Supporting the Inclusion of Children with Autism Spectrum Disorder	Johanna Anglim, Paula Prendeville & William Kinsella	Educational Psychology in Practice	Perceptions of teachers at the 1st level regarding their own self-confidence and advancement in terms of the inclusion of pupils with ASD.	qualitative study	6 teachers of 1st level	analysis of semi-structured interviews, interpretative phenomenological analysis (IPA)	Ireland

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Supporting the Socio-Emotional Aspects of the Primary-Secondary Transition for Pupils with Social, Emotional and Behavioural Needs: Affordances and Constraints	Joan Gaynor Mowat	Improving Schools	The benefits and challenges of the group-work approach used by pupils with social, emotional, and behavioral needs (SEBN) in the process of transition from primary to secondary school.	qualitative evaluative, mixed-methods case study	26 support-group leaders	focus group discussions, Likert-type scale questionnaire	Scotland, UK
Soft Barriers' – The Impact of School Ethos and Culture on the Inclusion of Students with Special Educational Needs in Mainstream Schools in Ireland	David McKeon	Improving Schools	Examining the impact of school ethos and the culture of access to inclusive practices in regular schools in Ireland.	small-scale qualitative research study	34 schools in total: initial questionnaire - principals (n = 19), special education teachers (n = 19) and guidance counsellors (n = 9); semi-structured interview - principals (n = 5), teachers (n = 8) and guidance counsellors (n = 4)	initial questionnaire (n = 47), semi-structured interviews (n = 17)	Ireland
School Participation: The Shared Perspectives of Parents and Educators of Primary School Students on the Autism Spectrum	Amy Hodges, Annette Joostena, Helen Bourke-Taylor & Reinie Cordiera	Research in Developmental Disabilities	School participation of pipuls with Autistic Spectrum Disorder in primary schools - the perspectives of parents and teachers	qualitative thematic analysis	15 parents + 11 educators (including teachers, deputy principals and learning support coordinators) all with experience with primary school pupils with ASD	focus group (n = 4) = aprx. 90 min. each (5 questions for parents; 5 questions for pedagogues8)	Australia
Inclusive Education: Why It Poses a Dilemma to Some Teachers	Ellen Kakhuta Materechera	International Journal of Inclusive Education	Exploring the perceptions of selected teachers regarding inclusive education in regular elementary schools	mixed methods approach (qualitative and quantitative) and a convergent parallel design	9 teachers of 1st level + 59 teachers	in-depth interview with teachers n = 9); questionnaires fillied in by teachers (n = 59)	South Africa
Federalisation and Education in Nepal: Contemporary Reflections on Working through Change	Angela Daly, Sara Parker, Samden Sherpa & Umesh Regmi	International Journal of Primary, Elementary and Early Years Education	Research on changes, opportunities and barriers to education in the newly federalized Nepal since 2019.	qualitative study (thematic analysis)	key stakeholders (n = 10): academics (n = 3), education leaders in NGOs (n = 4) and head teachers (n = 3)	semi-structured interviews	Nepal
Accommodations for the Inclusion of Children with Disabilities in Regular Schools in Trinidad: A Mixed Methods Approach	Bephyer Parey	International Journal of Inclusive Education	Including children with disabilities into mainstream schools in Trinidad.	multiphase mixed methods design	Phase 1: Parental representatives and advocates for each disability. Physical: 3 + 1, mental: 2 + 2, intellectual: 5 + 2, sensory: 3 + 2. total: 13 parents + 7 advocates. (interview); Phase 3: questionnaire 142 primary and 67 secondary schools (questionnaire) - principals, advocates, senior teachers	1st phase: one-item interview with parents, advocates to identify forms of support necessary for children with disabilities; 2nd phase: questionnaire creation; 3rd quantitative phase of questionnaire implementation (by phone) - 142 primary schools, 67 secondary schools (principals, assistant principals, senior teachers interviewed teachers); 3rd qualitative phase: interview on legislation with 2 officials from the Ministry of Social Development and Family Services	Trinidad

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Challenges of inclusion: a qualitative study exploring barriers and pathways to inclusion of persons with mental disabilities in technical and vocational education and training programmes in East Africa	Ikenna D. Ebuenyi, Esther S. Rottenburg, Joske F. G. Bunders-Aelen & Barbara J. Regeer	Disability and Rehabilitation	To research challenges and support of the inclusion of persons with mental and intellectual disabilities in technical and vocational education and training programmes in four East African countries.	explorative, qualitative study	10 technical and vocational education and training (TVET) and disabled persons organisations (DPO) coordinators	10 in-depth interviews (6 men and 4 women) via Skype lasting 45-90 minutes; subsequent focus group with other participants to confirm the codes resulting from the interviews and the interview analysis.	Ethiopia, Kenya, Rwanda, Uganda
Teachers' Knowledge about Learning Disabilities Regarding Information Education Communication (IEC) Package at Selected Schools, South India	Christopher Amalraj Vallaba Doss, Syed Mohamed Sadath, R.M.Palanivel, Muhil Sakthivel	International Journal of Scientific & Technology Research	A study evaluating the effectiveness of the IEC package on teachers' knowledge of learning disabilities in selected schools. IEC = Information, Education and Communication package	qualitative study	60 teachers in a study group and in a control group (60 minutes) from 4 schools. A questionnaire for both groups was used to obtain demographic variables. Subsequently the study group completed a 30 minute IEC package, following which both groups took a post-test.	mixed quantitative design. Experimental and control studies. Data analyzed using descriptive and inferential statistics - Chi square test. Student's Paired t test, Student Unpaired t test and ANOVA.	South India
Learning from High-Attending Urban Indigenous Students: A Case Study	Lindy Baxter, Noel Meyers	The Australian Journal of Indigenous Education	What are the factors of indigenous aborigines living in the capital city influencing strong school attendance (over 90% attendance)	case study	Indigenous students filled out an online questionnaire, with answers showing 40% of them maintain a high attendance (over 90%). 45 indigenous aboriginal pupils surveyed from Melbourne, capital of Victoria, AUS.	descriptive statistics and frequency of responses to identify the desired cohorts of students.	Australia
Voices of the Voiceless: Inclusion of Learners with Special Education Needs in Botswana Primary Schools	Sourav Mukhopadhyay, Boitumelo Mangope & Fazlur Moorad	A Special Education Journal	Experiences with the integration of pupils with SEN in primary schools in Botswana.	qualitative study	6 primary schools, 36 primary school pupils with SEN and 36 primary school pupils without SEN, discussions in 6 + 6 focus groups, age of participants 8-14 years	focus group (12x). Open coding in ATLAS.ti, supercodes created, assembled by all researchers	Botswana
Improving Compliance in Primary School Students with Autism Spectrum Disorder	Tsuyoshi Imasaka, Pei Ling Lee, Angelika Anderson, Angelika Anderson, et al.	Journal of Behavioral Education	Compliance with guidelines regarding students with autism spectrum disorder. Research of the effects of self-control intervention in two 8-year-old boys with ASD and attention deficit hyperactivity disorder.	qualitative study	Two eight-year-old boys with a diagnosis of autism spectrum disorder enrolled in the general education system, either in a private or Catholic school, in 1st or 2nd grade.	classrooms observation; consultations with classroom teachers; focus on writing, reading, counting	Australia
Escuchar las Voces del Alumnado para Construir la Inclusión y la Equidad Educativa: Diseño y Validación de un Cuestionario (Listening to Student Voices to Build Inclusion and Educational Equity: The Design and Validation of a Questionnaire)	Pilar Arnaiz Sánchez, Remedios De Haro Rodríguez, Salvador Alcaraz García & Carmen María Caballero García	Multidisciplinary Journal of Educational Research	Reporting of elementary school pupils on whether inclusion and equal education for all have a role to play and enrich their school	qualitative study	questionnaire completed by 2,649 pupils	reliable questionnaire designed by 9 experts	Spain

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'Do what you can'. A case study on Disability and Physical Education / 'Haz lo que puedas'. Un estudio de caso sobre diversidad funcional y Educación Física	Daniel Martos-García & Javier Monforte	Ágora para la Educación Física y el Deporte (Agora for Physical Education and Sport)	Life story of a wheelchair (congenital myopathy) sports graduate. Path of studies and perception across the study years in primary school, secondary school, university); very pro-inclusive, promoting inclusion and warning against fear of it based on this case.	qualitative study	4 narrative in-depth interviews with one respondent (each a total 120 minutes; years 2006, 2010, 2016)	narrative analysis; semi-structured interviews	Spain
Time, Expertise and Status: Barriers Faced by Mainstream Primary School SENCos in the Pursuit of Providing Effective Provision for Children with SEND	Mia D. Smith & Karen Broomhead	Support for Learning	Barriers in the work of special pedagogues at primary schools.	qualitative study	15 special needs pedagogues	IPA, semi-structured interviews	United Kingdom
Teaching Mathematics to Lower Attainers: Dilemmas and Discourses	Julie Alderton & Sue Gifford	Research in Mathematics Education	Teaching mathematics to weaker students.	qualitative study	3 teachers	observations, unstructured interviews	United Kingdom
Wilderness Schooling: A Controlled Trial of the Impact of an Outdoor Education Programme on Attainment Outcomes in Primary School Pupils	Toby Quibell, Jeanne Charlton & James Law	British Educational Research Journal	Educational impact of a curriculum based outdoor educational program.	qualitative study	440 pupils	testing	United Kingdom
Students with Autism Transitioning from Primary to Secondary Schools: Parents' Perspectives and Experiences	Michelle Tso & Iva Strnadová	International Journal of Inclusive Education	Inclusion of children with autism transferring from primary to secondary school.	qualitative study	15 parents; 12 pupils	interviews	Australia
Being a Deaf and a Teacher: Exploring the Experiences of Deaf Teachers in Inclusive Classrooms	Teketel Agafari Hankebo	International Journal of Instruction	Communication and experience in teaching deaf and perception of teachers in the inclusive classroom. Communication and interaction of deaf teachers with conventional pupils.	qualitative study	7 teachers	semi-structured interviews, observations	Ethiopia