EVALUATING THE USE OF THE EGIFT PROGRAM IN PRE-SERVICE TEACHER EDUCATIO

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Abstract Teacher education in giftedness and teaching gifted students is crucial, as teachers are key to supporting gifted students in school. The European Gifted Education Training (EGIFT) online educational resource provides learning experiences aimed at improving professional competence in gifted education. For the present study, EGIFT was evaluated in the framework of the Gifted students in school elective course for 34 undergraduate students from the Faculty of Education at the University of Ljubljana. The students generally reported having positive experiences with EGIFT, indicating that the contents were informative and interesting. They proposed different ideas about how its contents could be used in teaching practice. The main suggestions for improvement were equalizing the difficulty of questions in quizzes, the use of the Slovene language for better understanding, and more interactive videos. Overall, the evaluation revealed that EGIFT is a suitable enrichment tool in the curriculum of gifted education for preservice teachers. It is particularly useful in remote learning settings and for individual study.

Keywords:
teacher education,
giftedness,
online learning,
evaluation,
gifted education

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1 Introduction

The use of effective provisions (in-school and out-of-school activities) for gifted students shows long-term benefits in gifted students' increased achievement in specific areas, their development of interests, and other elements of motivation, productivity, creative thinking, and career goals (Booij et al., 2017; Delcourt, 1993; Hébert, 1993; Lubinski et al., 2001). All this is possible through educators possessing the appropriate education on and knowledge of how to support the education and development of gifted and talented children and adolescents. However, research shows that this is often not the case and that educators lack the knowledge and skills to identify and meet the needs of gifted students (Hudson et al., 2010; Troxclair, 2013; VanTassel-Baska & Johnsen, 2007; World Council for Gifted and Talented Children, 2021). Consequently, educators may have misconceptions rooted in the traditional understanding of giftedness and the gifted (Sękowski & Łubianka, 2015; Tourón & Freeman, 2017), and they may have difficulty accurately identifying gifted students and applying differentiation strategies (VanTassel-Baska et al., 2020).

For these reasons, teacher education in giftedness and teaching gifted students is crucial, because teachers are key to supporting gifted students in school. It should include state-of-the-art, research-based best practices in the field of gifted education (VanTassel-Baska & Johnsen, 2007; World Council for Gifted and Talented Children, 2021). In initial teacher education, this can be on a compulsory or optional basis. European countries have no uniform system for teacher education in giftedness (Cseh, 2011; EURYDICE, 2006; Mönks & Pflűger, 2005). In Slovenia, the topic of gifted education is integrated within the broader framework of psychology and pedagogy courses and offered as an optional subject (Cseh, 2011; Juriševič, 2011; 2020).

Sękowski and Łubianka (2015) point to other additional resources for disseminating knowledge about gifted education in Europe. Institutions, such as the European Council for High Ability (ECHA) and the European Talent Support Network (ETSN), enable researchers, teachers, psychologists, specialists in education, and parents from Europe to share their knowledge and experiences. The European Council for High Ability (ECHA) organizes specialist training courses for working with gifted students in several countries (although not in Slovenia), but these courses are not free of charge. Increasing one's knowledge about gifted education is also

possible through literature on the psychology of high ability. In Europe, the *High Ability Studies* journal is dedicated to these topics.

Although some educational programs for teachers on gifted education exist, there are still significant deficits. These educational programs are rare, usually not free of charge, and do not follow the holistic and broad perspective of gifted education, which is recognized as an important global principle for professional learning in gifted education (World Council for Gifted and Talented Children, 2021).

In addition to the lack of teacher education programs in the field of gifted education, there is also lack of evaluation of teacher education programs in general, as well as in gifted education (Plunkett & Kronborg, 2021; Rogers, 2007; Reid & Boettger, 2015; Reid & Horváthová, 2016; Weilguny et al., 2011), although some evaluations of training programs exist (e.g., Fraser-Seeto et al., 2015; Sayı, 2018). Fraser-Seeto et al. (2015) investigated teachers' awareness and willingness to engage with a self-directed professional development package, and the findings suggest teachers' lack of knowledge and uptake.

Some positive outcomes of teacher education programs in gifted education have been reported in empirical research, namely changes in attitudes (Plunkett & Kronborg, 2011; 2021; Vreijs et al., 2017), improvement in equitable identification practices (Gallagher & Gallagher, 2013), and planning for curriculum modification (Reis & Westberg, 1994; Westberg & Daost, 2003).

For the above reasons, it is important that educators have access to high-quality programs for educating gifted students. High quality can be achieved through the evaluation of such programs.

1.1 The EGIFT Program

Professional development and training for teachers in gifted education at preservice and in-service levels is very important but is often neglected or insufficient. One measure to address this problem was to develop a freely available and easy to use online open educational resource, called Online Programme for Teachers of Gifted Students in Regular Classrooms (EGIFT: European Gifted Education Training, n. d.). This was an Erasmus+ funded project developed by European experts in gifted

education aimed at the delivery of continued professional development opportunities to teachers at a primary or elementary school level, in the field of gifted education. EGIFT was built upon a body of educational practices and research that has been developed by a number of institutions across Europe.

This online educational resource consists of five individual strands, which cover all important topics on gifted education: the identification of gifted students, their lived experience, the social-emotional support of the highly able, differentiation strategies for mainstream classes, and the development of curricula suited to gifted students. Each of these five strands is underpinned by three guiding principles: addressing underachievement in gifted students by helping them reach their potential, addressing equality of access to such differentiated instruction for all students from diverse backgrounds, and the support of students who are multiply exceptional – students whose high abilities are coupled with other special educational needs. The structure of the EGIFT program is shown in *Figure 1*. Each strand is divided into four units, each unit taking approximately one hour to complete. The online program is designed to be interactive, including written texts, videos, additional reading suggestions, and quizzes.

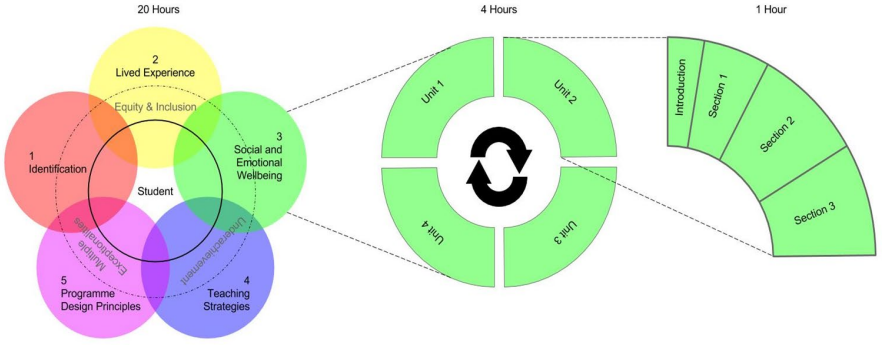

Figure 1: Structure of the Online Programme for Teachers of Gifted Students in Regular Classrooms (EGIFT)
Source: EGIFT: European Gifted Education Training, n. d.

1.2 The Present Study

With current advances in technology and digital literacy, the online environment offers new opportunities for professional preparation and learning in gifted education. With the onset of the COVID-19 pandemic, this transfer of the learning

setting from traditional to remote education was even faster and more urgent. Accordingly, the study process at the university level also changed, and emergency remote teaching (Hodges et al., 2020) was introduced in the 2020/21 academic year. This seemed like a good opportunity to implement the EGIFT online program in the elective course on gifted education called *Gifted students in school*. User experiences and responses to the EGIFT online program remain unclear, as there is no published research that has examined these issues.

Therefore, the aim of this study was to intensively investigate the implementation of EGIFT and to find out its usefulness and quality in the context of an elective course for university students (preservice teachers). Our research question was: *How does the online EGIFT program work with university students?* The framework for the evaluation of the online educational resource EGIFT was Kirkpatrick's (1994; 1996) evaluation model, which comprises of four essential levels of evaluation, each of which has an impact on the next. The levels are as follows: reaction (with focus on student reactions to the program), learning (with focus on student learning outcomes), behaviour (with focus on student behaviour change), and results (with focus on the program impact).

2 Method

The following research is a case study of the EGIFT program that examined the experiences and preferences of undergraduate students enrolled in the elective university course focused on gifted education. The course was delivered remotely because of epidemic measures. In addition to lectures, the students engaged with the EGIFT program, and presented and discussed its contents in seminar classes. The case study is phenomenological, and it aims to describe and understand the lived experiences of the participants within the given case (EGIFT program).

2.1 Participants

The sample included 34 undergraduate students (preservice teachers) from the University of Ljubljana, Faculty of Education with a mean age of 21.9 years (SD_{age} = 1.0). The majority were female (n = 32). Of all the students, 23 were in 4th (last) year, eight in 3rd year, one in 2nd year, and one in 1st year. They were enrolled in

six different study programs; most of the students being in special and rehabilitation pedagogy (*Figure 2*).

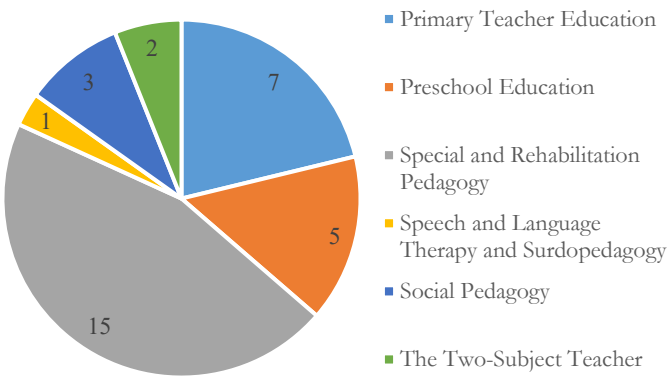

Figure 2: A display of the study programs in which the students were enrolled
Source: own

2.2 Instruments

The EGIFT evaluative questionnaire was comprised of three main areas for assessment. The first area was the online learning environment, which included four items on the ease of use, structure-design, modalities (audio, text, video), and technical characteristics. The second domain was content quality. It included nine items: content clarity, usefulness for learning about gifted education, informative, interesting, text and videos meaningfully cover the topic, clearly defined learning goals, meeting the objectives of the unit, access to resources that enrich understanding of the topic, and question relevance. The third area for evaluation was the usefulness of the program. This included three items on interest/motivation to pursue the topic further, recommendation to others, and transferability/applicability to a personal or professional context. A question on the difficulty of the questions at the end of the unit was added. The students rated various items on a 5-point scale (1 – poor, 5 – great; for the relevance of the questions: 1 – not relevant, 5 – very relevant; for the difficulty of the questions: 1 – very easy, 5 – very hard). Ten optional open-ended questions on these topics were added to supplement the quantitative data. In addition, the authors analysed the qualitative data based on student reports and discussions in the seminar classes.

2.3 Research Procedure

In the 2020/21 academic year, all 34 students were enrolled in the *Gifted Students in School* elective course, which ran for one semester, from October 2020 to January 2021, and was led by the authors of this paper. The course was implemented remotely because of health measures following the onset of the coronavirus pandemic. As part of the elective course, the students had the task of studying certain contents in the EGIFT program. They were divided into 10 groups, with each group consisting of two to five students studying two EGIFT units. Each group presented and discussed the EGIFT contents in the seminar classes, in the same order as they are included in the EGIFT program. At the end of the semester the students also prepared written reports and completed the evaluative questionnaire on their EGIFT experience. The questionnaire was created in the Slovenian 1KA open-source web application (1KA, 2021).

The data analysis consisted of two parts, qualitative and quantitative. The combined three-way qualitative analysis was based on the open-ended questions in the evaluative questionnaire, the students' reports, and the discussions in the seminar classes. The quantitative analysis was based on the evaluative questionnaire. One participant did not complete the evaluative questionnaire, which is why the quantitative analysis included answers from 33 students. Individual scores for online environment (four items total), content quality (nine items total), and usefulness (three items total) were calculated by adding the ratings of the survey items on the 5-point scale and converting the results into percentages. The overall assessment score was composed of all three main areas of evaluation (online environment, content quality, and usefulness).

3 Results

The results are presented according to the individual content areas of the EGIFT evaluation: first, the assessment of the online environment, second the content quality, and thirdly, with the usefulness of the program, concluded with a general evaluation of the program, covering all mentioned areas. The quantitative results from the evaluation questionnaires are presented, supported by qualitative results.

First, students assessed the online environment of EGIFT. The scores of all groups but one were above 75% (*Table 1*), which indicates that the students were satisfied with the online environment. They reported that the program was user-friendly and simple, well-structured (e.g., *Very well structured and meaningfully arranged in a sequence that is easy to follow.*), well-designed, concise, and that the videos presented an added value. They also found some areas for improvement, mainly the video quality and technical issues, and the lack of interactive contents and dynamics in videos (e.g., *Videos could be more dynamic, as this would make it easier to follow.*).

Table 1: Students' assessments of the EGIFT program in general, its online environment, content quality, and usefulness

		Online Environment (%)		Content Quality (%)		Usefulness (%)		Overall Assessment (%)	
Strand	Unit	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
1: Identification	Unit 1&2	83.8	11.1	77.8	13.8	83.3	11.5	80.3	11.0
	Unit 3&4	87.5	11.9	79.4	9.1	81.7	10.0	81.9	8.8
2: Lived experience	Unit 1&2	75.0	20.0	79.3	10.5	62.2	31.5	75.0	16.3
	Unit 3&4	76.7	18.9	85.2	8.4	75.6	16.8	81.3	12.1
3: Social and emotional wellbeing	Unit 1&2	83.3	20.8	82.2	11.1	75.6	3.8	81.3	11.1
	Unit 3&4	81.7	15.3	79.3	6.8	82.2	16.8	80.4	7.3
4: Teaching strategies	Unit 1&2	77.5	3.5	86.7	0.0	93.3	9.4	85.6	2.7
	Unit 3&4	58.8	4.8	60.0	12.4	65.0	22.0	60.6	11.8
5: Program Design Principles	Unit 1&2	82.5	2.9	83.3	8.2	78.3	8.4	82.2	4.8
	Unit 3&4	90.0	8.7	73.3	11.8	64.4	20.4	75.8	12.5

The second area the students assessed was content quality. Nine out of ten groups assessed it as adequate, with mean scores above 73% (*Table 1*). The qualitative analysis showed students reported that the contents were of high quality and meaningful, including many suggestions and examples for teaching talented students (e.g., *The contents are meaningful and useful for teachers and other pedagogical staff. Namely, there are many suggestions and examples that teachers can use when teaching gifted students.*). The students reported that they gained new knowledge, mainly about teaching gifted students, giftedness in general, identification, and the characteristics of gifted students and twice-exceptional students. The two main weaknesses the students

exposed were foreign language (difficulties in translating and understanding certain terms) and missing practices of educating gifted students from their home country.

On a 5-point scale with 1 being very easy and 5 being very hard, the students assessed the difficulty of the questions at the end of each unit. The most frequent answer was 3, which means the questions were not too easy and not too hard. The average scores of all groups regarding the difficulty of the questions are presented in *Figure 3*. The students reported that the questions were good for testing knowledge, getting feedback, and motivating. They also highlighted the evenly covered contents in the questions as positive. Their suggestions for improvement were in using more higher-level questions testing comprehensive understanding of the contents, using the same terms in questions as in the text (e.g., *The questions were difficult to me, especially because the terms used in text and quiz did not match, which is confusing if you are not an English speaker.*), and similar difficulty of the questions in different units.

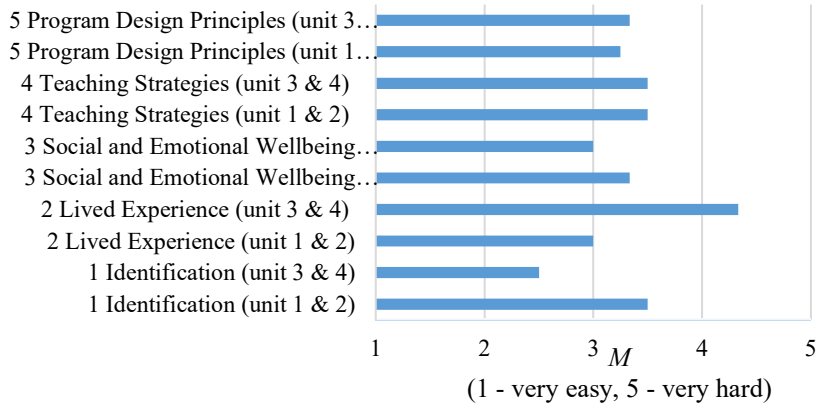

Figure 3: Average difficulty of the questions assessed by the ten groups of students
(1 – very easy, 5 – very hard)
Source: own.

The third area of the EGIFT program evaluation was its usefulness. Seven out of ten groups found it useful, with mean scores above 76% (*Table 1*). The mean scores of three groups were lower but above 62%. The qualitative analysis showed that the students reported the contents were useful for teaching and they could use the knowledge in a pedagogical context when working with gifted students (e.g., *Important topics related to identification and work with the gifted are covered. The program encourages teachers who encounter it to delve into their own concepts and practices while reading*

contents about gifted students. We find this method very appropriate, as it can further deepen our knowledge and thus contribute to better practice of working with gifted students.), to raise awareness and educate other pedagogical workers, to identify gifted students (e.g., *We found many helpful tips on how to create a stimulating learning environment in which gifted students are accepted. We believe that such knowledge is extremely important for future teachers because it will be easier to identify such talented students and encourage them.*), and to evaluate and plan. The students also reported higher self-confidence in relation to working with gifted students.

The authors combined the results of the three areas of evaluation into a general evaluation score (overall assessment). The results are shown in the last column of *Table 1* and in *Figure 4*. The average scores of nine out of the ten groups were above 75%, indicating high overall quality. One group had a lower overall score with a mean of 61%. This group of students rated all aspects of the EGIFT program lower than the other nine groups. This could mean that these specific units were of lower quality or that this group of students had specific individual characteristics, such as rigour. Interpretation must be done cautiously, since the groups were small and consisted of two to five students per group.

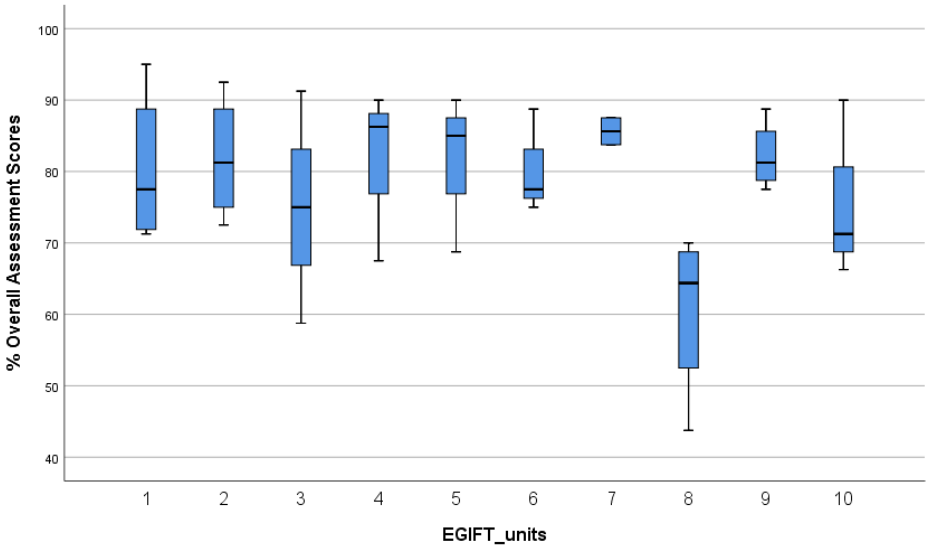

Figure 4: Boxplot of the overall assessment scores of the ten groups of students
Source: own.

4 Discussion

This study documented and evaluated the implementation of the EGIFT Online educational resource in the framework of the *Gifted students in school* elective course for 34 undergraduate students at the Faculty of Education at the University of Ljubljana. The students were generally satisfied with EGIFT in terms of the basic evaluation elements (Kirkpatrick, 1994; 1996), such as quality of content, usefulness, and online learning environment. Since the program covers the most important topics in gifted education and because the students' experiences with it were positive, one can conclude that EGIFT is suitable for educating pre-service teachers about gifted students and incorporating the program into remote teaching with university students. This is important because sufficient knowledge and informed beliefs contribute to appropriate educational provisions for gifted students and prevent the creation of myths about gifted students (e.g., Delcourt, 1993; Hébert, 1993; Lubinski et al., 2001). Sękowski and Łubianka (2015) state that high demands are placed on teachers of gifted students. They are in the role of both master and mentor, which means that they must not only recognize the instructional and educational needs of their students and implement programs to support their potential, but also have a deep knowledge of their teaching subject, giftedness, and gifted education. Westberg and Daost's (2003) findings also suggest that university training is most likely to influence teacher practice, compared to other forms of professional training. For this reason, high-quality initial teacher education is so important, and prospective teachers should receive high-quality gifted education. The EGIFT program proved to be a good addition to the elective course.

Suggestions for expanding or improving the existing program were derived from the qualitative analyses. The most common shortcoming reported by the students was the use of a foreign (English) language and examples and best practices from other countries and contexts. Since the students also attended the elective course lectures and seminar classes, these topics were addressed there, but this remains an area for improvement in the EGIFT program. Evidence-based learning that is also culturally relevant contributes the most to knowledge about teaching gifted students (Plunkett & Kronborg, 2021; VanTassel-Baska & Johnsen, 2007). The second common suggestion from the students was more interactivity. Although they highlighted interactivity as one of the strengths of the program, they also made some suggestions on how to improve it (e.g., more interactive and dynamic videos, highlighted text).

The third suggestion was related to examples and best practices. The students praised the use of several examples and best practices in EGIFT but pointed out that they would like to see even more of them, since they bring them closer to the application of knowledge in practice.

The authors would also like to highlight some of the features of EGIFT that make the program particularly prominent. In Europe and Slovenia, courses on gifted education that are holistic and broad, evidence-based, and free of charge, are rare. EGIFT covers the important topics in gifted education that are research-based and practice-based. It is also free of charge and accessible to anyone with access to a computer, which is important. The results of Burkman's (2012) study on novice teachers' challenges and preferences for professional development also show us why the EGIFT program is especially useful and suitable for pre-service and in-service teachers. The participants ranked teaching gifted students in the top 25% when asked about challenges in the classroom. The most meaningful professional development for them was interactive and cooperative learning.

This study provided insights into the value of implementing the EGIFT program in an elective course about gifted education. EGIFT proved to be a helpful resource for educating preservice teachers about gifted students. However, we must keep in mind that the conclusions of this study are limited to the relatively small sample of 34 university students and 33 survey respondents, who used the EGIFT program for one semester. EGIFT was also not their only source of knowledge, rather it was combined with lectures and seminar classes. The results might be different in a different setting or with a different target group, which would be meaningful to monitor with new cohorts of students. However, it can be concluded that the EGIFT program enhanced the quality of learning and teaching and formed a sound, evidence-based approach to use and even enhance in the future.

Acknowledgments

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