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## Needs Assessment of Extracurricular and Leisure Activities for Students in Multi-Grade Elementary Schools in Khalkhal County

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### Article Info

#### Article type:

Research Article

#### Article history:

Received 01 Feb. 2024

Received in revised form 18 Apr. 2024

Accepted 25 Jul. 2024

Published online 01 Sep. 2024

#### Keywords:

Needs Assessment,  
Leisure Activities,  
Extracurricular Activities,  
Multi-Grade Schools

### ABSTRACT

**Objective:** The objective of the current investigation was to execute a comprehensive needs assessment concerning extracurricular and leisure activities for students enrolled in multi-grade elementary schools within Khalkhal County.

**Methods:** This inquiry is categorized as applied research with a specific focus on needs assessment, employing a mixed-methods approach. The study's participants encompassed educators, school administrators, male and female students, parents, specialists, and advocates in the domain of extracurricular and leisure activities, who were purposefully selected from multi-grade rural schools in Khalkhal County and interviewed until the point of saturation was achieved. To quantitatively assess the content validity, the study utilized the Content Validity Ratio (CVR) and the Content Validity Index (CVI). The analysis of data was executed through thematic analysis employing open, axial, and selective coding methodologies, while prioritization of needs was conducted using the Delphi technique.

**Results:** The findings of the study revealed that the needs assessment pertaining to extracurricular activities comprised 17 distinct components, with the highest priority assigned to the acquisition of new skills and experiences, extracurricular academic and educational classes, alongside scientific competitions. Furthermore, the needs assessment related to leisure activities identified 14 components, with the foremost priorities being artistic endeavors, indigenous and local games, as well as cultural and sports competitions. The results indicated that the leisure and extracurricular activity requirements of female and male students exhibited notable disparities.

**Conclusions:** The findings derived from this study may serve as a foundational framework for recognizing and strategizing to address the deficiencies in formal and extracurricular education, thereby fostering educational equity for students in rural educational settings.

**Cite this article:** Gholipour, F., Sabzeh, B. & Mohammadshafiee, A. (2024). Needs assessment of extracurricular and leisure activities for students in multi-grade elementary schools in Khalkhal county. *Iranian Evolutionary Educational Psychology Journal*, 6 (3), 303-322.

DOI: <https://doi.org/10.22034/6.3.303>



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DOI: <https://doi.org/10.22034/6.3.303>

Publisher: University of Hormozgan.

## Introduction

A significant portion of students' growth and learning during their school years occurs through formal and informal programs. Although educational systems strive to incorporate most students' educational needs into formal curricula, this is not entirely feasible, and formal programs alone are insufficient. It is necessary to consider informal programs, extracurricular activities, and out-of-classroom activities as well ([Hahn and Kwon, 2018](#)). Extracurricular activities, which occur as supplementary programs in or outside of school, are an essential part of educational and developmental programs that influence the growth and life of children. Extracurricular activities are generally associated with the path of growth and the development of various skills in children ([Ren & Zhang, 2020](#)), and their goal is to promote positive development in children and adolescents, as well as to understand and strengthen successful growth in the next generation ([Foley & et al, 2023](#)).

Posner (1995) believes that extracurricular activities include all planned experiences outside of school courses that are undertaken voluntarily and are different from the formal curriculum, as they respond to students' interests. [Fathi Vajargah \(2021\)](#) also defines extracurricular activities as all planned experiences that are outside the scope of school subjects and are in contrast to the formal curriculum. Many experts believe that although these activities are less prominent administratively than the formal curriculum, they are more effective and efficient in many aspects ([Fathi Vajargah, 2021](#) and [Atabaki et al., 2016](#)).

Extracurricular activities are of great importance and have a special place due to the development of desirable psychological, social, cultural, and personality traits in students. These activities enable students to enter the community, which usually happens less in formal lessons. Furthermore, extracurricular activities assist in accelerating and facilitating formal education and act as a bridge between formal programs and real-life learning.

In a general classification, these activities are divided into three types: recreational, cultural, and scientific, and are often carried out in the form of a combination of regular scientific, recreational, and cultural programs under the supervision of the teacher as part of the school's daily schedule ([Tierney & Hallett, 2020](#)). These programs have diverse backgrounds and require constant care

and attention from school authorities to provide meaningful opportunities for student participation ([Fredericks, 2018](#)).

By participating in extracurricular activities, students gain experience in practicing social roles, acquiring physical and mental skills, feeling a sense of belonging to a social group, establishing relationships with peers and adults, and developing skills in dealing with challenges ([Darling & et al; 2005](#) and [Darling, 2005](#)). Sports activities, group and teamwork, and friendly associations that are formed alongside classroom lessons are examples of extracurricular activities that affect academic performance, acquisition of complementary skills and competencies to the curriculum ([Buckley & Lee; 2021](#)) and provide students the opportunity to learn about cooperation with others, ethical conduct, healthy competition, self-awareness skills, and so on ([Anderson, 2021](#)).

Engaging in extracurricular activities and leisure leads to increased motivation and interest ([Gureshi Nejad, 2016](#)), reduced likelihood of school dropout, decreased misbehavior, positive self-concept, increased interaction with school, active participation in cultural, political, social, and other voluntary activities, mental health and well-being ([Pkins, 2021; Thomas, 2020, Berger& et al, 2020](#)) and improved student behavior in school and society ([Massoni& et al, 2020](#) and [Annu& et al, 2019](#)). These activities provide the grounds for the growth and flexibility of students in emotional, psychological, and social dimensions ([Valcke & et al, 2023](#)).

Other extensive research has also indicated that participation in extracurricular activities leads to greater academic success and progress, as well as the development of social skills, self-confidence, self-esteem, self-awareness, and respect for human differences ([Corr, 2023](#)). [Pan, Yangu, Di Zhou, and Daniel Tan Lei Shek \(2021\)](#) in their research acknowledged that extracurricular activities lead to the overall growth of students and play an important role in diversifying and realizing the comprehensive development of students, especially when classes are boring and monotonous. [Berezina et al. \(2020\)](#) showed that sports and recreational extracurricular activities are a component of the development of cognitive activity in elementary school students. The study by [Alyson et al. \(2020\)](#) also showed that extracurricular activities have a significant impact on student success. [Han & Kwon \(2018\), Joseph \(2009\), Williams \(2023\), Zare Badiei \(2021\), Hajizadeh \(2019\), and Jabbery \(2023\)](#) have emphasized the social and emotional achievements and academic progress through extracurricular activities. [Lang \(2021\)](#) has also emphasized the key role of extracurricular activities for students after the COVID-19 pandemic

more than ever. [Feldman & Matjasko \(2005\)](#) researched school-based extracurricular activities and showed that these activities lead to greater participation, academic progress, psychological adaptation, reduction of risky behaviors, and so on. A large-scale field study of 15,000 American students showed that extracurricular activities had an impact on their executive performance, and participating students scored two to three times better and a higher percentage of them completed their studies ([Holloway, 2017](#) and [Keigher, 2010](#)). [Anderson \(2021\)](#) also showed through an examination of teachers' views on the impact of extracurricular activities that teachers acknowledged that students who participate in extracurricular activities have better academic progress, more regular school attendance, and fewer behavioral problems and disciplinary referrals. As it is clear from the research literature, many of them have supported the benefits of extracurricular activities. Therefore, extracurricular activities are an important part of educational programs that affect children's lives and generally influence the path of children's academic skill development ([Ren & Zhang; 2020](#)).

The importance of this phenomenon is particularly significant among primary school students in rural and nomadic areas, who do not enjoy the same level of development and welfare indicators as urban areas, and due to the nature of these areas, which experience unequal economic, social, and cultural conditions ([Kosaretsky & Ivanov, 2020](#)). [Duncan \(2014\)](#) stated that rural school students have fewer opportunities to access cultural literacy and cultural exchange. Moreover, in addition to the lack of extracurricular activities in rural schools, the leisure activities of rural students are very limited and are often combined with their family work and occupations. Experts consider leisure activities to include a range of activities such as play and recreation, which individuals engage in without a sense of obligation and apart from educational or occupational activities and vital needs ([Aghazadeh and Fazli, 2021](#)).

Iran, due to its geographical location, has a large rural population, and the dispersion and low population of their students often results in the formation of multi-grade schools in rural areas. Multi-grade education is a global phenomenon, and the *raison d'être* of this type of education in most countries is to achieve education for all. This type of education, while occupying a significant share of education for all, also aims to provide access to quality education ([UNESCO, 2015](#) and [Khandal, 2018](#)). Education that pays attention to the real needs of students, especially in rural areas, in the form of formal curricula or extracurricular programs.

Multi-grade classrooms have a purposeful organizational structure, where two or more grade levels of students are taught by a single teacher ([Azizi and Hossein Panahi, 2012](#)). This classroom organization creates a unique educational situation that provides the opportunity for interaction among students of different ages, experiences, and abilities in a single classroom ([Aghazadeh and Fazli, 2021](#)).

However, rural multi-grade schools experience various issues and challenges. For example, they face serious challenges in terms of a lack of learning environment facilities, physical space ([Abdi, 2018](#), [Darvish Noor, 2019](#)), and a shortage of experienced teachers. Research shows that one of the most important challenges is the lack of time and lack of attention to the leisure needs of students and extracurricular activities in multi-grade schools ([Bashiri Hadadan, 2013](#); [Almasian, 2015](#); [Babadi spring, 2016](#); [Karimi and Ghafouri, 2017](#); [Darvish Noor 2019](#)). A comparative study of extracurricular activities in Iranian primary schools with other successful countries in this field has shown that goal-setting in extracurricular activities has been generally done and has focused more on the attitudinal aspects. The content of the programs also has less diversity, and a specific time and hours for such activities have not been foreseen in schools, and the level of teacher participation is also less ([Imam Jume, Ahmadi and Timurnia, 2013](#) and [Hatami Ghorbandi and Qobadi, 2021](#)). Also, more rural primary students, instead of participating in extracurricular activities, spend more time learning the official subjects due to the expectations and demands of parents and educators, and serious planning and support in this regard are not provided ([Pan, Yangu, Di Zhou, and Daniel Tan Lei Shek, 2022](#)).

Most of the research conducted on the leisure and extracurricular activity needs of rural students has focused on the effectiveness of these programs in various academic ([Jaberi, 2023](#); [Nazari and Yazdan \(2018\)](#); [Zare Badii, \(2021\)](#); [Darzi Ramandi and colleagues \(2019\)](#)), social and emotional ([Jaberi, 2023](#); [Hajizadeh, 2018](#)), creativity development ([Nazari and Farouq Yazdan, 2018](#)), increasing academic motivation and interest ([Pinojost, Alvarinas, Lucia Pomars \(2020\)](#); [Gureshi Nejad, 2016](#)), and citizenship skills ([Amini, 2015](#)) dimensions of students. On the other hand, technological and technological advancements have penetrated all the borders of cities and villages, causing noticeable changes in the lifestyle and leisure activities of children and adolescents, and have influenced their needs and interests. In this regard, formal curricular programs alone are not sufficient and responsive, and as mentioned in the fundamental

transformation document and the national curriculum (1391) of the country, the field of technological education and life skills should formally enter the structure of the curriculum in the form of textbooks and skill-based and extracurricular activities. This necessitates needs assessment to make decisions and review formal and informal programs, especially leisure and extracurricular activities of students, especially in rural areas. The personal experiences of the researchers based on years of living, studying and teaching in multi-grade rural schools, regarding the neglect of extracurricular activities and the leisure needs of rural students, as well as the lack of cohesive studies on the needs of these students for regular, cohesive and serious planning in this area; It was decided to conduct this research to assess the needs and identify the gap between the current and desired situation in the extracurricular programs and leisure needs of rural students, and to answer the fundamental questions in this field: What are the leisure and extracurricular needs of students in multi-grade rural schools in Khalkhāl city? What is the current and desired situation in this regard? And what are the main priorities, separated by male and female students?

### Material and Methods

The current research is applied in terms of its purpose and falls under the category of needs assessment studies, which was conducted in a mixed (qualitative-quantitative) manner. Needs assessment is the process of collecting and analyzing information that leads to the identification of the needs of individuals, groups, institutions, the local community, and the community as a whole. Therefore, the primary purpose of needs assessment is to identify needs, which can be related to students, teachers, or the future needs of the local, regional, and national education system ([Fathi Vajargah, 2021](#)).

In this research, the needs assessment is focused on the leisure and extracurricular needs of multi-grade students. The goal-oriented needs assessment model developed by Klain was used to conduct the study, which includes the following steps:

Identifying all possible objectives.

Arranging the objectives based on their importance.

Determining the gap and difference between the desired and the current situation.

Identifying the priorities for implementation.

Following this model, the present study also followed the above-mentioned steps. Specifically, in the first step, to identify the leisure and extracurricular needs of rural multi-grade students, the participating groups, which included all those who are affected by the results of the needs assessment, were selected, and their opinions were collected through various methods, including interviews. At this stage, all the mentioned items were considered regardless of their quality.

In the second step, with the help of the participants and using appropriate methods such as reviews, group meetings, the Delphi technique, brainstorming, or a list of stated objectives, a list of objectives was obtained based on their importance. The first and second steps are the steps taken to determine the current and desired situation.

In the third and fourth steps, based on the identified needs, the gap and difference between the current and desired situation were determined. First, the most important items were identified, and then, based on the opinion of experts, prioritization was carried out.

The participants in the research also included the following individuals:

- 1 - Teachers and principals of multi-grade rural schools with at least two years of teaching or management experience in multi-grade schools
- 2 - Specialists and activists in the field of extracurricular activities and leisure time who had scientific or practical experiences.
- 3 - Parents of multi-grade students who had at least one child studying in a multi-grade primary school.
- 4 - Male and female multi-grade students who were studying in rural schools.

The sample selection was done in an available and purposeful manner from the rural schools of Khalkhal city. The number of sample individuals in the student group was 20 people from all grades; parents (15 people); teachers, principals and experts (15 people) and a total of 50 people were selected until consensus was reached. For data collection, the interview tool was used to identify the existing and desired situation. To examine the content validity quantitatively, two content validity ratio (CVR) and content validity index (CVI) coefficients were used. The CVI and CVR values of the questionnaire items used are as described in the following table:

**Table 1.** Content Validity Ratio (CVR) and Content Validity Index (CVI) values

Question	CVI	CVR	Question	CVI	CVR
1	0.93	0.73	12	1.00	0.86
2	0.87	0.86	13	0.87	0.6
3	1.00	1.00	14	0.8	0.73
4	0.87	0.73	15	0.8	0.86
5	1.00	0.73	16	0.93	0.6
6	0.8	0.6	17	0.93	0.86
7	0.8	0.6	18	0.93	1.00
8	0.87	0.73	19	1.00	0.73
9	0.93	1.00	20	1.00	1.00
10	0.87	0.73	21	0.87	0.73
11	0.93	0.86	22	1.00	0.73

Data analysis in the qualitative section was conducted through coding, categorization, and thematic analysis of the interviews. All interviews were digitally recorded and transcribed verbatim immediately after recording. The text of each interview was read multiple times, and the data was simultaneously collected, coded, and analyzed from the start of the study. Coding and classification continued throughout the research process. The data was transformed and narrowed down to construct the categories. Through the creation of categories, the data was coded using open and focused coding.

Additionally, the Delphi technique was used to reach a consensus on the obtained data. The Delphi technique is one of the renowned consensus-building methods, which aims to achieve collective agreement on a specific topic or domain, through the systematic collection of independent expert opinions using questionnaires (Habibi et al., 2014). The results of the expert group's opinion analysis were reported based on the calculation of Kendall's coefficient of concordance. Descriptive statistics such as frequency percentages were also used to examine the demographic characteristics, which have been omitted from the article due to the increase in the length of the paper.

Ethical considerations: Some of the ethical considerations of this research are:

- Obtaining informed consent from the participants that they can withdraw from the research at any stage.
- Obtaining consent from the interviewees due to recording the content of the interviews
- Ensuring that information obtained from contributors remains confidential (privacy and confidentiality).

## Results

In this section, first, the findings from the content analysis of the interviews are presented in three sections: teachers and experts; parents; and students. Then, the Delphi results are presented, and finally, the research questions are answered. The results of the directed content analysis are shown in the table below.

**Table 2.** Directed content analysis of extracurricular activities from the perspective of experts, school principals, parents, and students

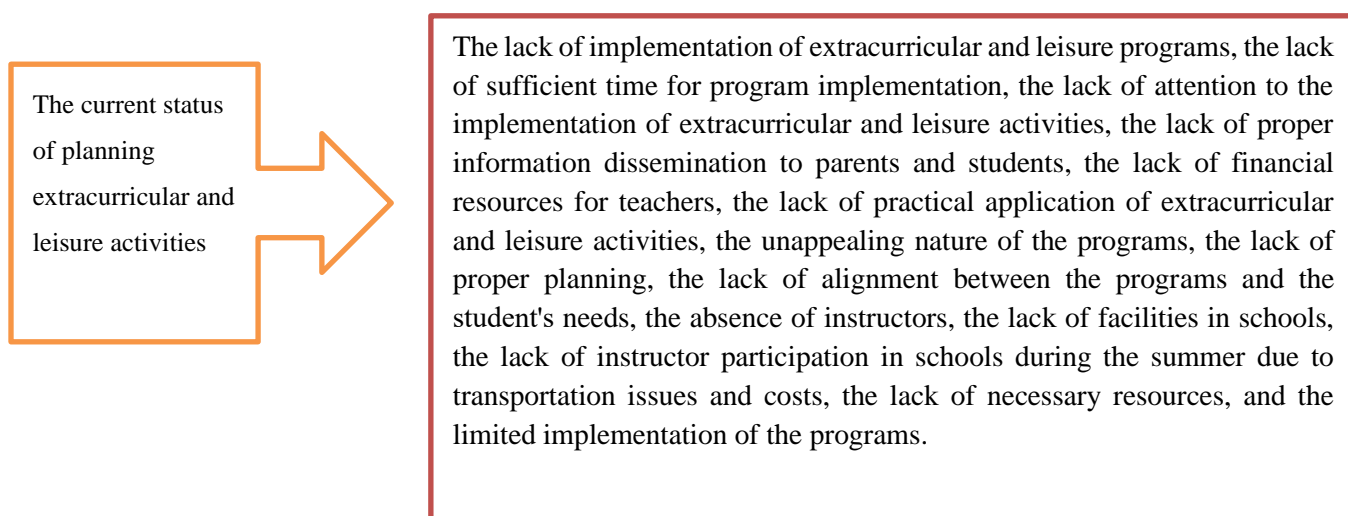
Selective coding (categories)	Axial coding (concepts)	Open coding (codes)
<b>Leisure programs and extracurricular activities</b>	The current status of extracurricular planning and leisure activities	Lack of implementation of extracurricular programs and leisure activities, insufficient time for implementing the programs, lack of attention to the implementation of extracurricular activities and leisure activities, inadequate information dissemination to parents and students, lack of financial resources for the teacher, irrelevance of extracurricular and leisure activities, unattractive programs, lack of student interest, lack of proper planning, lack of alignment between programs and student needs, lack of coaches, lack of facilities in schools, lack of willingness of coaches to attend school during the summer due to transportation problems and costs, lack of necessary resources, limited implementation of the programs.
	The needs of students in extracurricular activities	Learning skills and gaining new experiences, educational extracurricular classes, acquiring life skills, scientific competitions, scientific excursions, poetry reading, computer training, art workshops, visiting museums and libraries and exhibitions, reading books, and participating in discussions. group, painting and drawing classes, reinforcement classes, getting to know local customs and traditions, making hand-made structures, story writing, storytelling classes, essay writing, activities appropriate to age and interest, mobile phone repairman, skill training
	Leisure needs of students	Artistic activities, native and local games, cultural and sports competitions, performing group shows, activities to help the future and development of the village, music, cultural activities, walking in nature, religious activities, going to the sports club, holding Celebrations, cooking classes in nature, theater and singing
	Students' fields of interest	Artistic activities such as drawing and painting classes, intra-provincial camps, traveling around the city and province, getting to know the library and becoming a member of it, sports activities such as football, volleyball, badminton, scientific excursions in nature, picnics in nature, crafts in nature Native and local games, fun competitions, training in carpet carpentry and carpet weaving, training in knitting simple woolen clothes with yarn, training in group social skills, performing shows, combined training, recreational programs in the form of camps and excursion programs. , learning handicrafts, acquiring new skills, riding a bicycle, watching movies and animations, and learning English.
	Possibility of access to all kinds of leisure activities in terms of time	Absence of time problem, three months of summer due to closure, possibility of activity in three months of winter during sports, time limit due to students helping parents in agriculture and animal husbandry matters, time limit due to participation of students in family livelihood

Possibility of access to all kinds of leisure activities in terms of location	The impossibility of easy location access, easy access in a few villages, limited location access due to the distance from the city, moderate location access, limited access to the sports club and public library.
Special extracurricular and leisure needs of boys	Sports activities, technical activities, agricultural training, activities combined with physical fitness and physical strength, making crafts and models, skill training, social skills, repairing household appliances, making hand-made structures, sports competitions, bicycle Riding, football, volleyball
Special extracurricular and leisure needs of girls	Sports activities, drawing and painting, storytelling, photo and film making, essay writing, research, story reading, wall newspaper preparation, sewing, carpet weaving, embroidery, social skills training, poetry writing, writing
Reasons for differences in extracurricular and leisure needs of girls and boys	Gender differences, differences in culture, differences in customs, differences in beliefs, existing gender stereotypes, labeling activities as girls and boys, parental mentality, physical and mental differences, emotions and feelings, interests and tendencies, differences in the type of games, differences in learning, developmental differences, culture and society's beliefs
Available programs in the field of extracurricular activities	Not doing extracurricular activities, holding national, religious and cultural events, drawing classes, playing football and volleyball and local games, teaching local native games, making handicrafts and origami, celebrating national events, reading books, and telling stories. , poems and songs, walks in nature
The appropriateness of existing activities to students' needs	Not paying attention to needs, paying attention to needs in a limited way

To determine the priority of the student's needs in the field of extracurricular activities and recreational programs, the results of the interviews and the codes obtained in the directed content analysis were considered, and the final components were extracted through the Delphi technique in three rounds, and the research questions were answered as follows.

**First question:** What is the current situation of the recreational and extracurricular needs of the students in the multi-grade rural primary schools in Khalkhal County?

The research findings showed that the current situation of the recreational and extracurricular needs of the students in the multi-grade rural primary schools includes the following components, which are shown in the figure 1.



**Fig. 1.** The current status of leisure and extracurricular needs of students of multi-grade rural primary schools in Khalkhal city

The **second question:** What is the optimal situation of recreational and extracurricular needs of students of rural primary schools in Khalkhal city?

The research findings showed that the ideal state of extracurricular and leisure needs of students in elementary schools, based on the needs assessments conducted, includes 17 components in the extracurricular activities section and 13 components in the leisure activities section. The prioritization of needs in the extracurricular and leisure needs sections is presented in Table 3 based on the average scores obtained from the experts.

**Table 3.** Optimizing the leisure and extracurricular needs of multi-grade students based on priority

Priority	Extracurricular needs	Score	Priority	Leisure needs	Score
1 <sup>st</sup>	Learning new skills and experiences	6.89	1 <sup>st</sup>	Art activities	6.95
2 <sup>nd</sup>	Extracurricular classes and training	6.85	2 <sup>nd</sup>	Traditional and local games	6.92
3 <sup>rd</sup>	Acquiring life skills	6.75	3 <sup>rd</sup>	Cultural and sports competitions	6.83
4 <sup>th</sup>	Scientific competitions	6.65	4 <sup>th</sup>	Cooking in nature	6.75
5 <sup>th</sup>	Field trip	6.59	5 <sup>th</sup>	Performing group shows	6.73
6 <sup>th</sup>	Poem reading	6.55	6 <sup>th</sup>	Group activities to help the development of the village	6.70
7 <sup>th</sup>	Computer training	6.52	7 <sup>th</sup>	Music	6.68
8 <sup>th</sup>	Art workshops	6.51	8 <sup>th</sup>	Cultural activities	6.65
9 <sup>th</sup>	Visiting museums, libraries, and exhibitions	6.50	9 <sup>th</sup>	Circulating in the wild	6.62
10 <sup>th</sup>	Book Reading	6.49	10 <sup>th</sup>	Religious activities	6.59
11 <sup>th</sup>	Participating in group discussions	6.45	11 <sup>th</sup>	Celebrations	6.54
12 <sup>th</sup>	Painting and drawing classes	6.42	12 <sup>th</sup>	Theater	6.50

13 <sup>th</sup>	Reinforcement classes	6.41	13 <sup>th</sup>	singing and chanting	6.46
14 <sup>th</sup>	Knowledge of local customs	6.40			
15 <sup>th</sup>	Making handmade structures	6.34			
16 <sup>th</sup>	Storytelling classes	6.32			
17 <sup>th</sup>	essay writing	6.29			

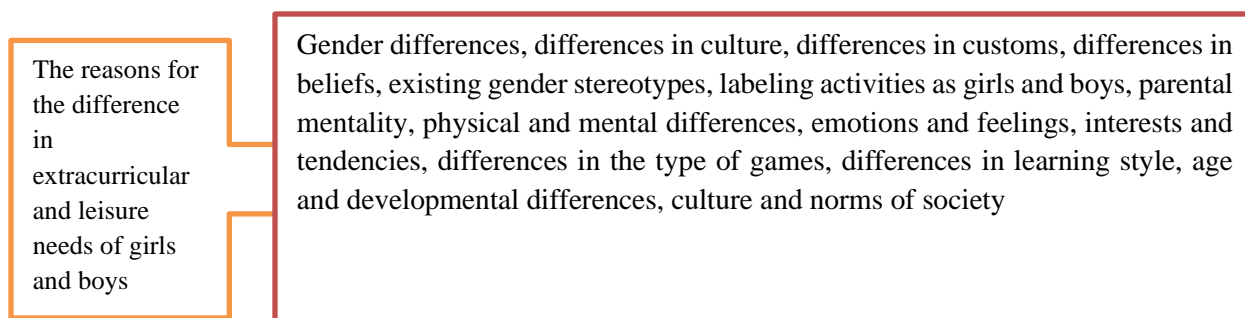
**Third question:** What is the prioritization of the leisure and extracurricular needs of male and female students in multi-grade rural primary schools in Khalkhal?

According to the findings, the extracurricular and leisure needs of male and female students each included 10 items, and the prioritization of these needs is presented in Table 4 as follows:

**Table 4.** Prioritization of extracurricular and leisure needs of male and female students in multi-grade rural elementary schools in Khalkhal county

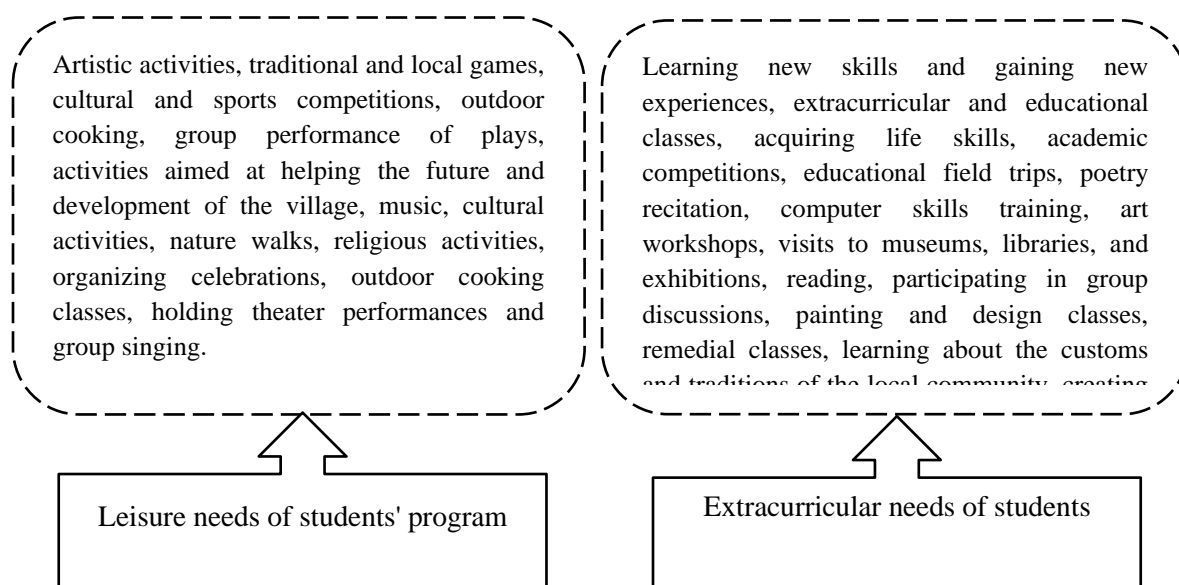
Priority	The needs of girls	Score	Priority	The needs of boys	Score
1 <sup>st</sup>	Designing and painting	6.83	1 <sup>st</sup>	sport activities	6.94
2 <sup>nd</sup>	Storytelling	6.80	2 <sup>nd</sup>	Technical activities	6.85
3 <sup>rd</sup>	tailoring	6.79	3 <sup>rd</sup>	Handcrafted structures	6.74
4 <sup>th</sup>	essay writing	6.78	4 <sup>th</sup>	Activities combined with physical fitness and physical strength	6.73
5 <sup>th</sup>	Research	6.75	5 <sup>th</sup>	Making crafts and models	6.69
6 <sup>th</sup>	Preparation of wall newspaper	6.72	6 <sup>th</sup>	Skill training	6.62
7 <sup>th</sup>	Photo and video production	6.70	7 <sup>th</sup>	sport competitions	6.61
8 <sup>th</sup>	Carpet weaving	6.69	8 <sup>th</sup>	social skills	6.59
9 <sup>th</sup>	embroidery	6.65	9 <sup>th</sup>	Agricultural training	6.54
10 <sup>th</sup>	Teaching social skills	6.62	10 <sup>th</sup>	Appliance Repair	6.53

Also, the reasons for the difference in extracurricular and leisure needs of girls and boys are shown in Figure 2.



**Fig. 2.** The reasons for the difference in extracurricular and leisure needs of girls and boys

The research findings showed that the final model of the needs assessment of extracurricular and leisure activities for multi-grade elementary school students in Khalkhal County consists of two main dimensions: extracurricular activities (including 17 components) and leisure programs (including 13 components), as shown in the figure 3.



**Fig. 3.** The needs assessment model of leisure and extracurricular activities of multi-grade elementary school students in Khalkhal city

## Discussion

Based on the research findings, the needs assessment of extracurricular and leisure activities for multi-grade elementary students in Khalkhal City included 17 components of extracurricular activities and 13 components of leisure programs. The student's needs in the field of extracurricular activities were: learning new skills and gaining new experiences, extracurricular academic and educational classes, acquiring life skills, academic competitions, educational field trips, poetry reading, computer training, art workshops, visiting museums, libraries and exhibitions, reading, participating in group discussions, painting and design classes, remedial classes, learning about the customs and traditions of the local people, making handicrafts, storytelling classes, and essay writing.

Additionally, the student's needs in the field of leisure programs included: artistic activities, local and Indigenous games, cultural and sports competitions, outdoor cooking, group performances,

activities aimed at helping the future and developing the village, music, cultural activities, nature excursions, religious activities, holding celebrations, outdoor cooking classes, theater performances, and choir.

The findings of this study are somewhat consistent with the research of Saadati et al. (2023), which referred to artistic programs as one of the extracurricular and leisure needs of students. Moreover, these findings are in line with the findings of [Hosseini and Bazmi \(2020\)](#), in which the holding of local festivals and religious education were identified as the required programs for rural students. These findings also confirm the findings of [Seyedan \(2019\)](#), which showed that the most important extracurricular and leisure needs of students are the need for tourism, the need to hold celebrations and ceremonies, the need for participatory activities, sports activities, cultural activities, religious activities, and artistic activities. This finding is in line with the findings of [Finterty et al. \(2021\)](#) and [Mätsäpelto and Pulkkinen \(2014\)](#), who mentioned journalism, playing a musical instrument, or singing as the recreational activity needs of learners and arousing their enthusiasm. [Esmacili and Rabiee \(2008\)](#), [Gartland and Pratt \(1991\)](#), [Kazemi \(2008\)](#), [Walkley et al. \(2023\)](#), and [Sadeghi et al. \(2009\)](#) are consistent with the results of this study, emphasizing the gender differences between girls and boys in extracurricular activities and recreational needs.

To explain these findings, it can be said that in the Iranian educational system, more attention is paid to the curriculum than to the extracurricular activities of students. While in many countries, the time allocated to such activities is not limited and is flexible, and it may take hours, the implementation of extracurricular activities and the provision of music and performance rooms, sports facilities and libraries, dining halls, etc. are required for rural students ([Imam jome et al., 2013](#)). Rural students have fewer opportunities for leisure time and extracurricular activities due to a lack of facilities and involvement in rural family activities such as agriculture and animal husbandry. Moreover, the recreational needs of girls and boys differ due to developmental and environmental reasons. According to the findings, this issue is influenced by various factors such as family conditions, the amount of educational facilities and access, as well as the prevailing social, cultural, and economic conditions of the society. Considering these factors and needs assessment of the current situation is essential for planning and reaching the desired goal. These needs are in such a way that, as a complement to formal education, they prepare rural students for life in the larger community, as the goal of these activities is to help the child and adolescent

recognize their genuine inclinations, discover their innate talents, and strive for their upbringing and development to ensure personal happiness and increase the possibility of participation in social activities. Therefore, it is recommended that according to the findings of this research, the planning for the implementation of recreational and extracurricular activities for students in multi-grade schools be carried out based on field studies and the actual needs of the students. More attention should be given to planning and implementing activities such as skills training, competitions, educational field trips, and reading programs. Additionally, sports, artistic, and cultural activities that align with the preferences of the students should be prioritized. It is recommended that the authorities of the national education system provide the necessary infrastructure, facilities, and equipment for the implementation of recreational and extracurricular activities in multi-grade schools. They should also create greater accessibility in terms of location and time. Furthermore, they should develop specialized training programs for the development of expert human resources skilled in the instruction and implementation of these activities.

In the policy-making and planning related to recreational and extracurricular activities for students in multi-grade schools, the interests and tendencies of the students should be taken into consideration. In the pursuit of educational equity, the planning should be structured in a way that ensures students in multi-grade schools have equal opportunities in the realm of recreational and extracurricular activities as their peers in regular schools. Additionally, the gender-based differences between girls and boys should also be addressed. The limitations that hindered the way of collecting information and obtaining the desired results included access to the participants of the research, which was difficult due to the conditions of multi-grade rural schools. Data collection took a long time. Failure to check the reliability of the data collection tool was another limitation of the research, which the present research, like other qualitative research, was not excluded.

### Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

### Ethics statement

The studies involving human participants were reviewed and approved by ethics committee of Farhangian University.

### Author contributions

All authors contributed to the study conception and design, material preparation, data collection and analysis. All authors contributed to the article and approved the submitted version.

### Funding

The authors did (not) receive support from any organization for the submitted work.

### Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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