Literacy levels in small villages in relation to local primary school

Imre Farkas [1*]

[1*] *University of Dunaujvaros, Táncsics M. str. 1/A, Dunaújváros 2400, Hungary, farkasi@uniduna.hu*

Abstract: The question is increasingly being asked at the beginning of the 21st century: does literacy still have a raison d'être? In the information society, all data and knowledge is at our fingertips thanks to the computer networks that surround our entire world and the data warehouses that are now becoming indeterminate in size. Is literacy and its level the same today as it was fifty years ago? Have the concepts that became popular at the end of the 20th century - competence and skills - influenced this in any way? What do people in small towns and villages think about literacy and its importance? Can the local small school and its staff play a role in changing the literacy levels of communities, and can they be expected to do so? Does the tangible proximity of artificial intelligence not pose a threat to literacy and cause its devaluation, deterioration and decline? This study seeks to answer these questions by presenting and evaluating the results of questionnaires filled in by people living in a small area. At the end of the study, it draws conclusions based on the results and presents further tasks that, if carried out, will provide an even broader insight into the relationship between literacy in small villages and the local primary school.

Keywords: literacy; small town; artificial intelligence; competence; capability;

1. Introduction

Groups, micro-communities, communities and the structure of the settlement in which a person lives play an important role in his or her development and personality formation in the early stages of life. Perhaps the most influential member of this multi-factorial environment, from an educational point of view, is the first institution which has a major impact on the individual's level of education. The size of the school, the number of students attending, the personality of the teachers and the structure of the settlement in which the institution is located all combine to shape and change the early traits of the individual. Small schools in small villages are in an exceptional situation, where these changes are even more profound thanks to personal acquaintance, neighbourly and kinship ties. Small schools play a key role in the life of local communities, not only in terms of education but also as a catalyst for the cultural and social development of the local community. Despite this, the quality and impact of the education

provided by small schools has received little academic attention, especially in the context of small villages. The present research investigates the potential of small schools in the development of the literacy level and community life of settlements, using the example of the South-Fey region.

The research will be based on questionnaire surveys conducted at two different points in time, in 2022 and 2024. The questionnaires were designed to explore attitudes towards the population's perception of literacy, its level, the role of local schools and the use of AI applications. Respondents were selected through purposive sampling, with a total of 811 respondents from ten municipalities in the region (Farkas 2023).

The results of the first survey showed that the population is aware of the potential role of local schools in improving literacy and community life. Preliminary results from the 2024 survey show that respondents are open to consciously raising their literacy levels and are interested in the application of AI in education.

1.1. Scope of the study

All the settlements in the south-south-eastern part of Fejér county (the area delimited in red in Figure 1.) are referred to as the South-Fejér area. This area includes the settlements of Baracs, Daruszentmiklós, Kisapostag, Mezőfalva, Nagykarácsony, Alsószentiván, Alap, Cece, Vajta and Előszállás. The total population of these municipalities is 20 962 inhabitants (based on KSH data as of 1 January 2022). The data provided by the municipalities in June 2022 show the number of primary schools in these municipalities (Figure 1.).

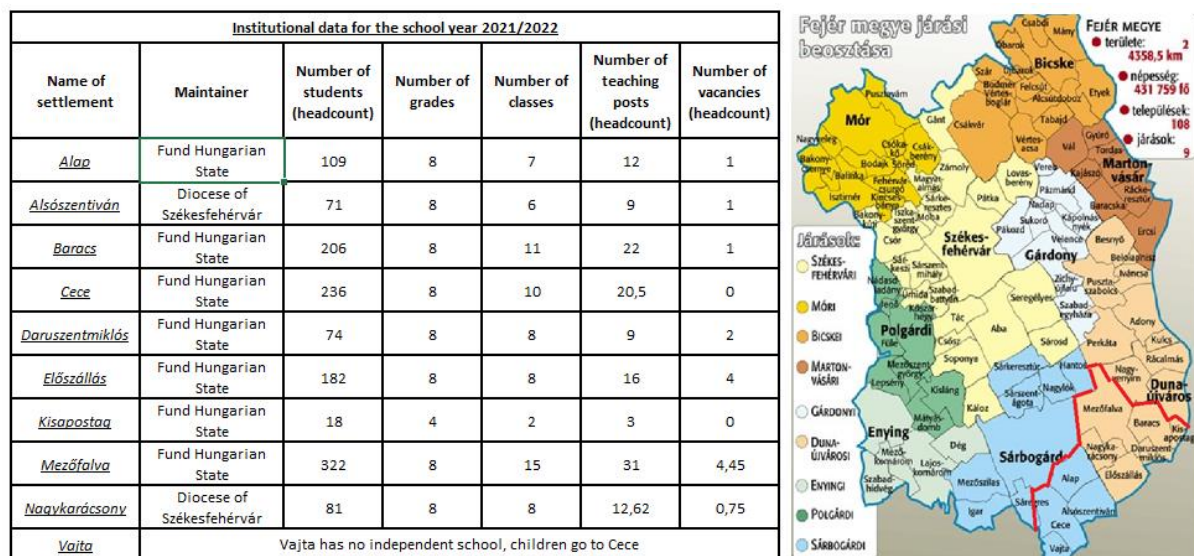| Name of settlement	Maintainer	Number of students (headcount)	Number of grades	Number of classes	Number of teaching posts (headcount)	Number of vacancies (headcount)
Alap	Fund Hungarian State	109	8	7	12	1
Alsószentiván	Diocese of Székesfehérvár	71	8	6	9	1
Baracs	Fund Hungarian State	206	8	11	22	1
Cece	Fund Hungarian State	236	8	10	20,5	0
Daruszentmiklós	Fund Hungarian State	74	8	8	9	2
Előszállás	Fund Hungarian State	182	8	8	16	4
Kisapostag	Fund Hungarian State	18	4	2	3	0
Mezőfalva	Fund Hungarian State	322	8	15	31	4,45
Nagykarácsony	Diocese of Székesfehérvár	81	8	8	12,62	0,75
Vajta	Vajta has no independent school, children go to Cece					

Figure 1. Data on schools in the South-Fejér region

This shows that the school sizes are very different. The three schools with the largest number of pupils are still operating as central schools. In the case of Mezőfalva, the number of children coming from the neighbouring municipality of Hantos (which is not included in the scope of the study) increases the number of pupils. However, it can be noted that most of the schools are small. Since 2022, the number of teachers has not improved and the number of pupils has not changed much.

1.2. Clarification of basic concepts

Two basic concepts that need to be clarified in order to understand the study are literacy and small school. It is important to begin by discussing these concepts because there is not really a single, universally accepted definition of either. The definitions adopted in the study and applied to the research are as follows.

Literacy

The literacy level of a municipality can be determined from the literacy level of the individuals who make it up. It is very difficult to give an exact figure, since there is no way of assessing the literacy level of all the inhabitants of a settlement. What we do have is data on the educational attainment of the inhabitants of the municipality (region, county, country), based on census data. The question is, does literacy follow directly from education? The meaning of *literacy* (in the dictionary) is: *Knowledge acquired through schooling, which a person acquires through education, reading, experience and various kinds of learning* (Báthory, Falus, 1997). It is also quite obvious that literacy is domain, society and age specific. Just like knowledge, it changes, devalues and requires constant care. "Of course, this concept is normative, it can mean different things from age to age and from society to society, and it is easy to see that in the same society, at the same time, different groups, strata and individuals do not possess the same degree of literacy as a whole. (G. Furulyás, 2015)"

The relationship between literacy and education is also a very important issue. Is the distribution of graduates adjusted to the size of the settlement, and are people with a degree more educated than people without a degree? Determining whether the proportion of graduates has changed more in urban or rural areas is very difficult. "The increase in the number and percentage of graduates is clearly influenced in a positive direction by the larger size of the settlement, its higher level of development and its proximity to colleges and universities. The spatial distribution of tertiary graduates is gradually becoming more even, mainly due to the fact that Budapest and the large cities concentrated fewer graduates in 2011 than in 2001 (Németh & Dövényi, 2018, p. 16)."

Active community life and the level of education in the municipality must be in harmony. This was also explored in the project *The need for community relations - a chance to renew democracy*, where it is stated: 'The data from our previous nationally representative survey, which was linked to the research objective, made it clear that the dominant determining indicators of political and social needs and participation are literacy, education and the level of material and material well-being that provides security. With this in mind, we assumed that public life will be stronger in villages where the majority of the population lives in a financially secure situation and has a level of education and literacy that is equal to or higher than the national average (Utasi, 2012, p. 4)."

Small school

There are many people working on this topic, but in the literature review two names came up a lot. These are Katalin R. Forray and Helga Andl. Katalin Forray R. Forray deals with school districts, school rehabilitation, village schools, school maintenance, ethnic-ethnic education (Györgyi, 2012). Helga Andl is also concerned with the state of small schools and their closure, but she is more concerned with the situation of small schools in Baranya County (Andl, 2012). In her doctoral thesis, she writes about the concept of small schools "(...) there is no clearly agreed number of pupils (number of corners) neither for settlements nor for schools; however, when we look at the issue of small schools, we find that the definition is typically based on numericality - it is interpreted in terms of the number of inhabitants of the settlement, the number of pupils in the school, the number of grades and classes per grade." (Andl, 2015, p. 17)

A very good approach and description can be found in the analysis of Small Schools in Small Settlements, published in 2006. This formulation is also the focus of the present study, and it is on the basis of these characteristics that the concept of a small school can be considered. "When defining the scope of small schools in small towns, we should consider the following three aspects:

- they are located in villages where there is only one primary school place of work;
- the school has no more than one separate class in any grade;
- the school does not have an eighth-grade education (no eighth-grade pupils attend the school).

Schools can therefore be considered small schools if they fulfil the first condition and at least one of the second and third conditions. That is to say, *small schools are those in villages with one class per year and those in villages with less than eight classes per year*." (suliNova, 2006, p. 6)

2. Research methodology

This topic is a pilot project, because no other study has been carried out on this topic in this area (at least, no study on a similar topic can be found in easily accessible sources). Therefore, for the literature analysis, I could not find and would not use any existing literature on this topic (neither locally nor nationally for any area or municipality), and therefore studies were examined that have the same content as parts of the topic of this analysis.

Throughout the study, the research seeks to answer four key questions:

- Is literacy still an important attribute for people living in the municipalities of the South-Fejér sub-region?

- Do the inhabitants really think of raising the level of literacy in their commune through community programmes?

- What role could the local small school play in raising literacy levels, and how acceptable would its presence in this area be?

- What impact could the rapid development of artificial intelligence have on literacy levels?

2.1. Hypotheses of my study

The hypotheses of the research are based on personal observations and preliminary evaluations of the experiences of the author and his immediate environment. The hypotheses were formulated in the hope of disproving the last hypothesis. The questionnaires were accessible to residents of all ages and educational levels, which may have resulted in spontaneity and variety of responses, even without careful reflection on the questions.

Hypotheses related to the questions:

- Hypothesis first: Literacy is still important for the inhabitants of the study area.

- Second hypothesis: The respondents consider that the best way to increase literacy is through community programmes.

- Third hypothesis: The local small school plays an important role in the development and increase of the literacy level of the inhabitants of the sub-region.

- Fourth hypothesis: The widespread use of AI applications does not increase literacy levels.

2.2. Questions and tool for the online questionnaire

The questions formulated and clarified in the research will be answered through the online sharing of the questionnaire, one of the research methods. The questionnaire was not intended

to explore in-depth correlations (it is not suitable for this purpose), but only to gather the opinions of the inhabitants of the municipality. Does the average resident think that there is a correlation between the effectiveness of the local educational establishment and the level of education, schooling and quality of community life in the municipality?

The advantages and disadvantages of the questionnaire method are:

- The main advantage is that it allows a large amount of data to be collected in a short period of time;
- The main disadvantages are that it cannot reveal the deeper context of the research, the individual characteristics of the subjects, and that there is a high risk of multiple completions and direct bias (which was not present in the survey).

There are many factors to take into account when compiling a questionnaire. The order of the questions in the questionnaire and the type of questions used are very important. Usually, when compiling the forms, demographic questions are asked first, followed by questions that are relevant to the research. A very important rule is to take into account who the respondents are when constructing and formulating the questions. Before constructing the questions, it is important to understand how the questions are asked. There are basically two ways of asking questions:

- Explicitly: specifically, by asking directly for the information you need.
- Implicitly: we obtain the information indirectly, inferring the information we need from the answers to the questions asked.

In this study, both types of questioning were used in order to confirm the consistency and thoughtfulness of the answer to each question. The types of questions to use when constructing a form are as follows:

- Open questions (projective questions);
- Closed questions (alternative questions, multiple choice questions, ranking questions, semi-closed questions, anecdotal questions);
- Intensity questions.

Of all the types of questions listed, the use of closed questions was the only option, as with open questions, the infinite number of possible answers would have made the results completely uninterpretable during the study.

An introductory text was included at the beginning of the questionnaire to explain the reason for its creation. Demographic questions (gender, age, education, place of residence) were asked as a prelude. This was followed by questions relevant to the topic. The number of questions

was maximised by the author to between 20 and 22. When compiling the questions, the time planned for completion was set at no more than 10-15 minutes. The average completion time was just over 10 minutes for the first questionnaire and almost 9 minutes for the second.

Before creating the questionnaire, the author tried several form designers (both paid and free). Microsoft Forms was the final choice. This program also offers the possibility to design forms to a high standard and is available free of charge thanks to Office365. A very good feature of the application is the possibility to keep track of the results in graphical form during the response collection period. What you should pay attention to is that the questions should be written well before sharing, because if you change them during the completion period, the results previously given for the modified questions will be grouped into an Other item, the separation of which will appear as extra work for later processing.

3. Description of the results of the questionnaire

As already mentioned in the introduction, the second form was distributed and completed in 2024 (February) for the residents of the sub-region. This form was available for 2 weeks and 453 people filled it in during this period. This is more than two percent of the surveyed population. Not all the questions were answered by all the respondents, which is why the number of responses to some questions is always different.

3.1. Demographic data of respondents

The set of demographic questions is very important for those analysing the form, as very interesting correlations can be found between these data and the answers to the other questions. For this study, there were four important questions in this area. The first one is the name of the municipality where the respondent lives, because this will show the extent to which the questionnaire was delivered to all ten municipalities and will be used to decide how representative the survey population is. The second is how long the respondent has lived in the municipality, since those who have lived here since birth are likely to have started their education in the municipality's primary school and therefore have an idea of the relationship between the literacy level of the municipality and the local school (Figure 2.).
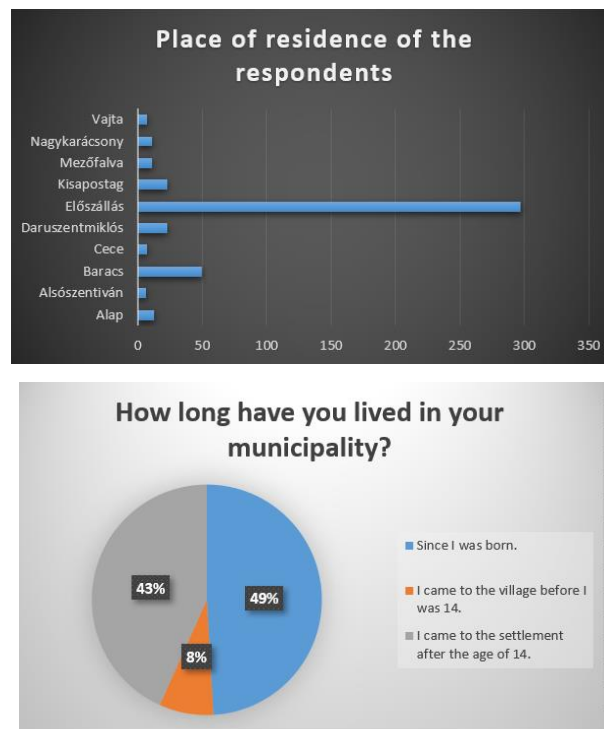
Figure 2. (a) Municipality of respondents; (b) How long have you lived in the municipality

The diagrams show that the respondents are mostly from Előszállás (roughly 2/3 of the respondents, which is not unexpected as the author lives there), and more than half of them have lived in the municipality since the age of 14.

The third demographic question is the age of the respondents, which is interesting because the conclusions that can be drawn after evaluating the answers to each question (in the case of a homogeneous age group) may not be true for the whole population. Also important demographic data is the educational attainment of respondents. There is a popular saying that "*the more I learn, the less I know*." This is due to the fact that people who are constantly expanding their lexical knowledge know that there is more and more knowledge in the world that they do not know. It also follows that the older a person is (presumably having undergone a process of becoming more literate), the more confident they are that their literacy level is low, because they know how much they don't know.
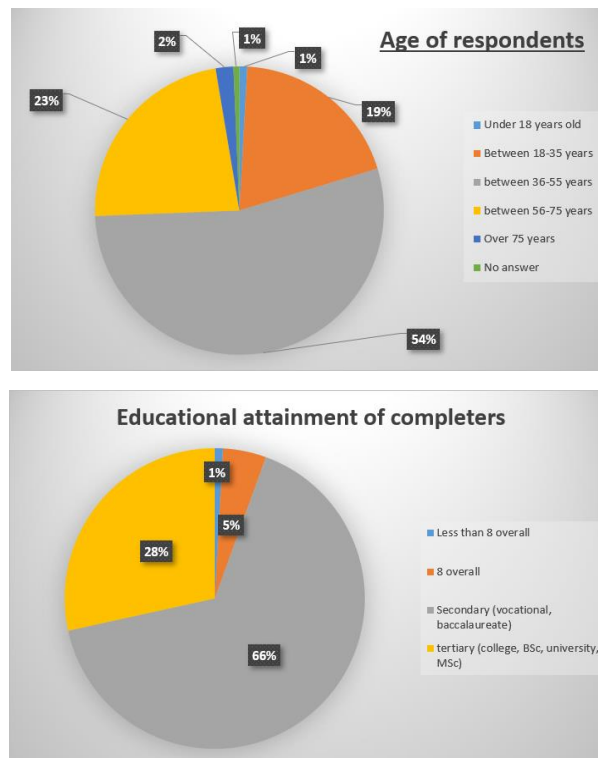
Figure 3. (a) Age of respondents (b) Education level of respondents

Responses show that respondents are middle-aged and most have a secondary education (Figure 3.). This is worth highlighting because, as already mentioned in the discussion of literacy, its meaning is certainly age-dependent. Different age groups may mean different things, even if some of the questions have been asked to indicate what they usually mean. And secondary education means that the majority of respondents have been in education for at least 11-12 years.

3.2. Evaluation of literacy questions

At the heart of the whole inquiry is whether literacy, as defined and accepted, is still relevant and valuable today? So the first question in this context was this: literacy is defined by many as the knowledge acquired through education, through reading, and through various kinds of learning (including knowledge acquired through self-discipline).
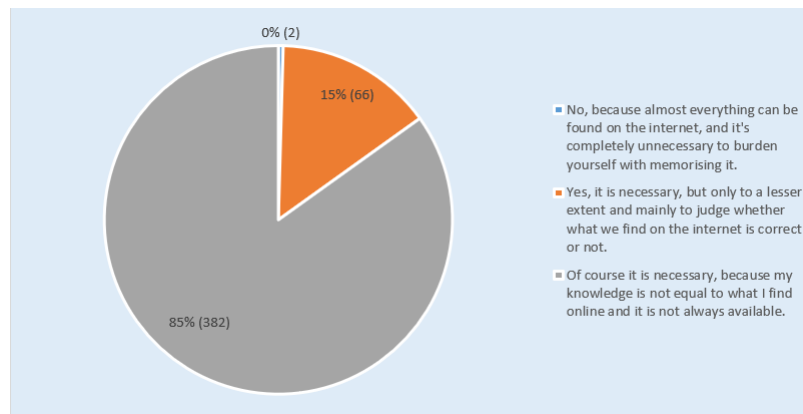
Figure 4. Do we still need literacy?

The vast majority of respondents still consider literacy necessary, although 15% feel that it helps in interpreting and deciding what is real and right and what is not (Figure 4.). Closely related to this is the question: should increasing the literacy level of a municipality be an area of concern for municipal leaders? To this question, 69% of respondents answered yes. So it can be said that not only do the inhabitants of the communes consider this important at an individual level, but they also think it is important at a commune level.

Questions included whether respondents would like to increase their level of literacy. Again 69% said yes. The reason for this was given by the majority of responses to a subsequent question: *Maybe this would help them to get around and find their way in this fast changing world* (66% answered this). This is really the best answer to increase literacy, as younger generations are also sitting more at the school desk (in the case of online education, in front of the computer) to gain the knowledge they need to get by in life.

The biggest surprise in the results of the 2022 questionnaire was how respondents would most like to raise their literacy level. This was confirmed by the following question (Figure 5.).
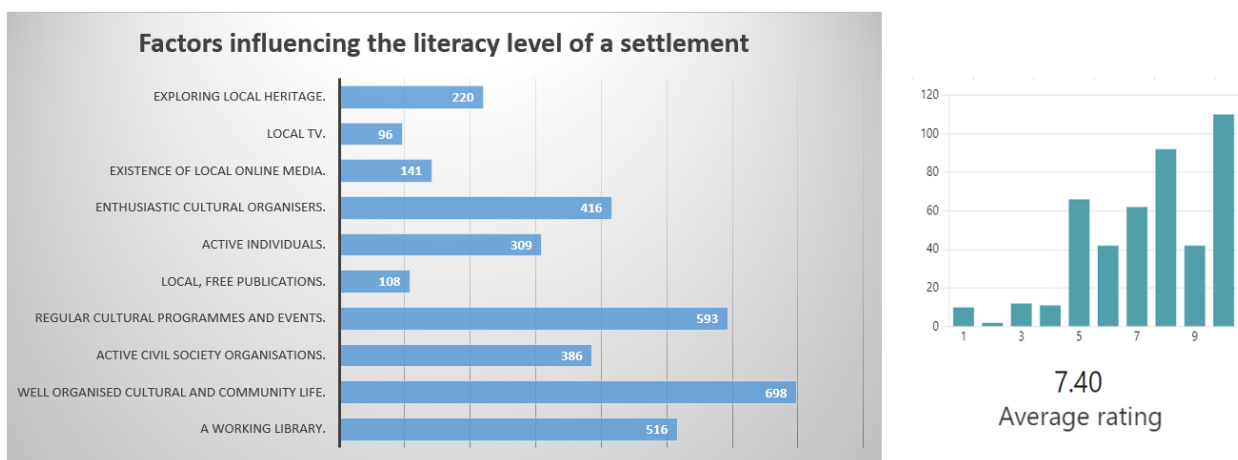

Figure 5. (a) Factors that play a role in raising literacy levels (2022) (b) How much do they agree (2024)

It is clear that the majority of people living in settlements believe that community programmes can help to raise the literacy level of the settlement. The question in the 2024 form reads. How much do you agree (1 disagree, 10 strongly agree)? The results show that they still think so. This is also confirmed by the result of the answer to the next question, which confirms the variation between community and individual activities (Figure 6.).
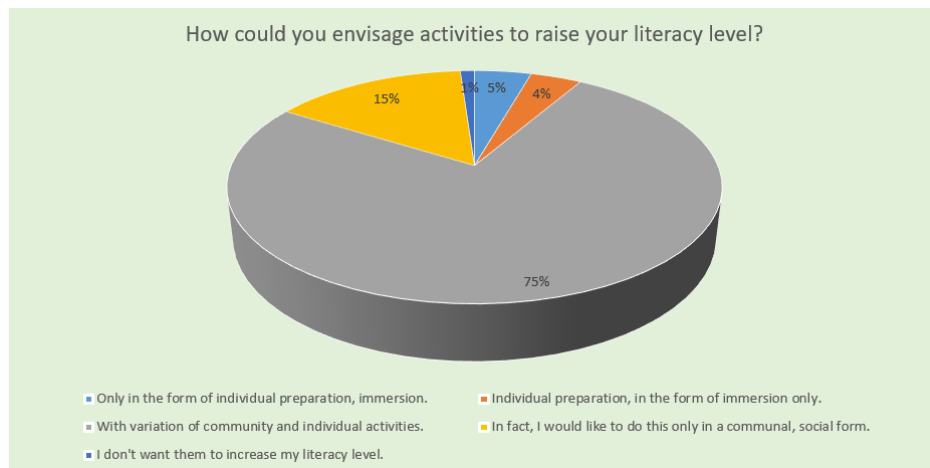

Figure 6. How activities to raise individual literacy levels

Even after a year and a half, there is full agreement that the community form is seen by respondents as playing an important role in raising the level of municipal literacy. If the school in the municipality (the teachers working there and the location) can play a role in this activity, it would seem that it should only *be implemented within the framework of community programmes*. The answer to the next question somewhat overshadows this picture.
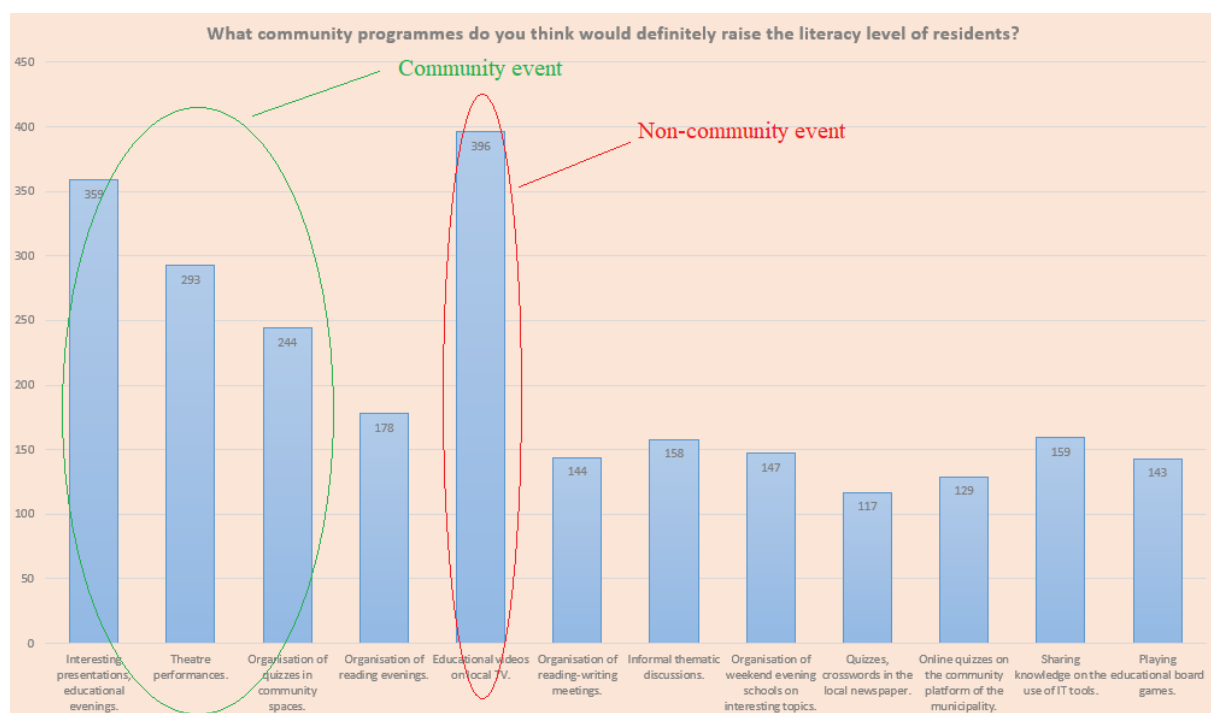

Figure 7. Which community programmes are sure to raise literacy levels?

The most frequently mentioned alternative is to *show educational videos on local TV* (Figure 7.). This was selected by 396 out of 452 respondents. This is a surprise because it is not a community programme at all, although the most marked response as a result of the tenth question (varying community and individual activities) had already predicted this at some point. True, the next three, which received marks above 50%, are all community programmes. Perhaps respondents may have been influenced by the appearance of the word educational in the response, and linked this more closely to education.

The present study concerns the extent to which small schools (the teachers who work there) could influence the literacy level of the municipality. Therefore, it was also important to ask whether the inhabitants could imagine the school as a venue for events aimed at raising literacy levels, and whether they would accept the presence of local teachers as organisers and facilitators of these events.
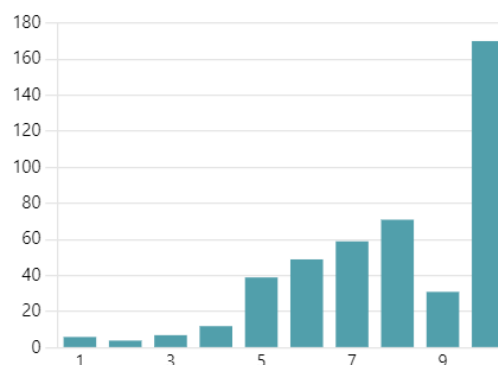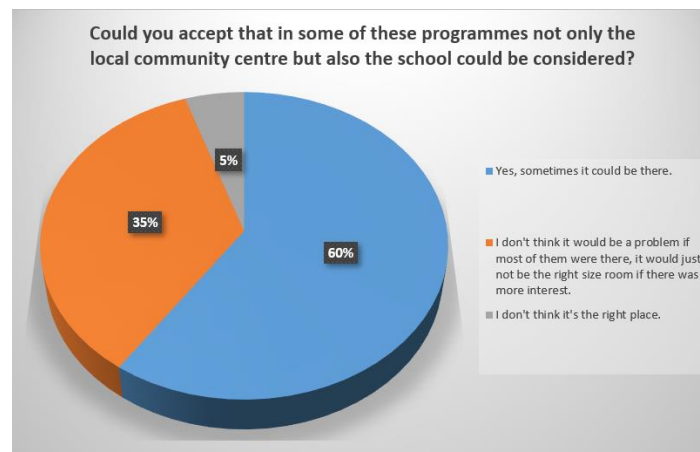
Figure 8. (a) Acceptance of the school as a location (b) Acceptance of the school and the local teacher

The majority of respondents can accept the fact that these events could be hosted by the local school and would welcome the presence of the teacher who teaches there (Figure 8.). This rightly raises the question of the extent to which people in a municipality think that this role should be the responsibility of teachers in a municipality.
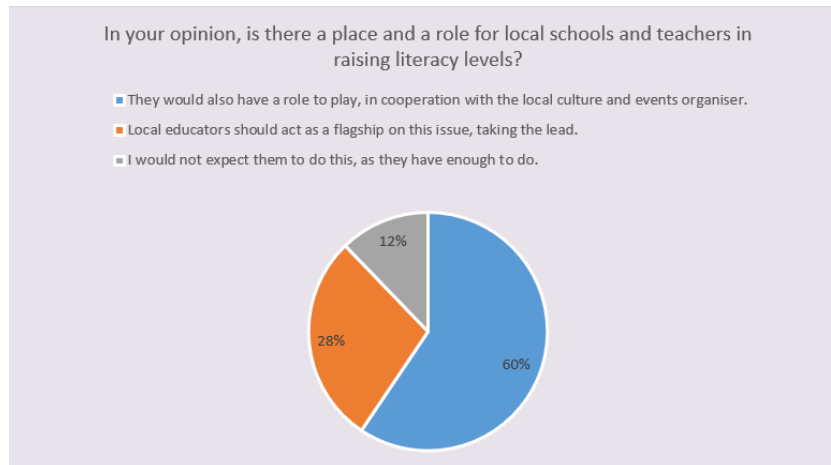
Figure 9. To what extent is it a teacher's responsibility to raise literacy levels?

The result is quite surprising, because if not only expected from them, the local teaching staff is considered by the residents to be one of the main driving forces in the field of literacy. Only 12% of respondents think that this is not their responsibility (Figure 9.). It will be interesting to see what the opinion of the educators who teach in the area would be if they were confronted with this fact.

Questions included how willing the respondents were to take a literacy test to determine their level of literacy. Most people experience such surveys as a competitive situation and try to present the best possible image of themselves. Often at the cost of using an aid (it is online, so no one can see it with a note). Therefore, one could also legitimately ask whether such a literacy test could be completed with the help of an aid to achieve a better result, and whether this could be an AI-based application.
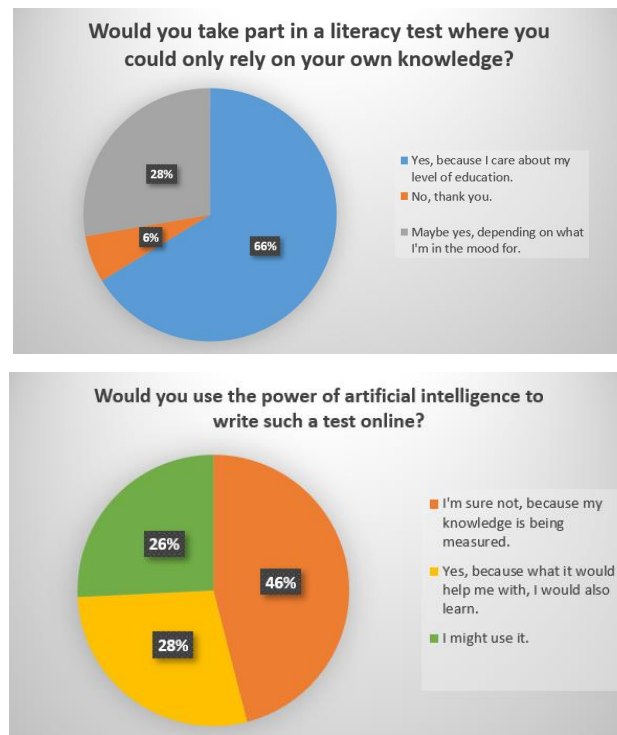
Figure 10. (a) Willingness to participate in literacy test (b) Intention to use AI application

1/3 of respondents would be willing to take a test to measure their literacy level (Figure 10 (a).).

This is significant because it would be useful to set up such a test in future studies to assess the literacy level of the inhabitants of the municipalities. It could be used to give some prediction of the literacy level of the whole municipality. However, it is very surprising that more than half of the respondents would consider using an AI application (Figure 10. (b)). It was not previously expected that people living in small villages would consider using such apps.

This was closely followed by two questions in the questionnaire on the use of AI-based applications and their impact on literacy levels.
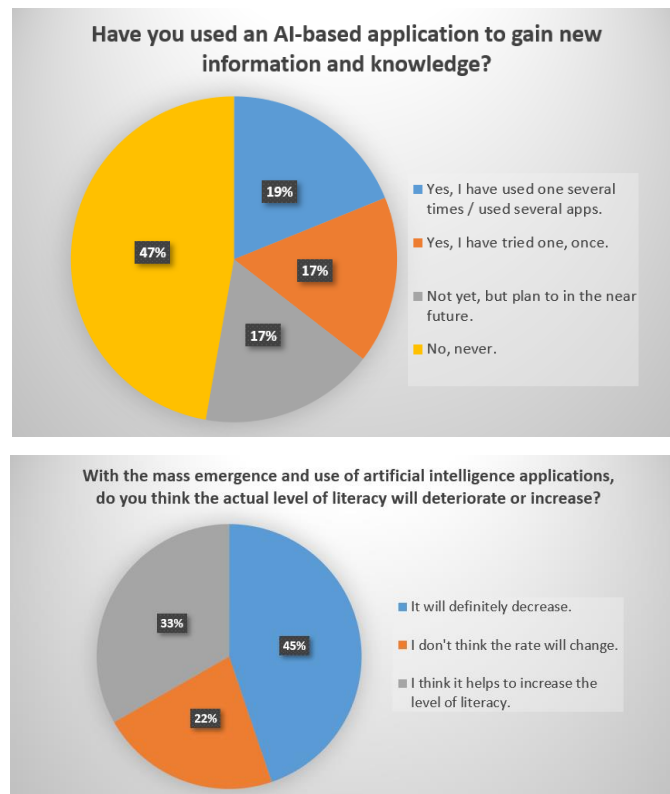
Figure 11. (a) Frequency of AI use (b) Impact of AI use on literacy level

More than half of the responses received showed a positive attitude towards AI-based applications (Figure 11. (a)). More than a third had already used such applications. This is of great importance for the study, because it reflects the fact that people in small towns are also open to technological developments, and that they are not only used by people living in cities. It is a much more difficult question, and the responses show this, as to the influence of these developments on the increase in literacy levels. 45% of respondents suspect that the field of AI is not moving literacy levels in the right direction (Figure 11. (b)).

The final question was what the respondents do to increase their literacy level. It was already clear from the first questionnaire that if there is openness to increase their literacy level, it is reasonable to assume that they are trying to increase it in some way themselves (Figure 12.).
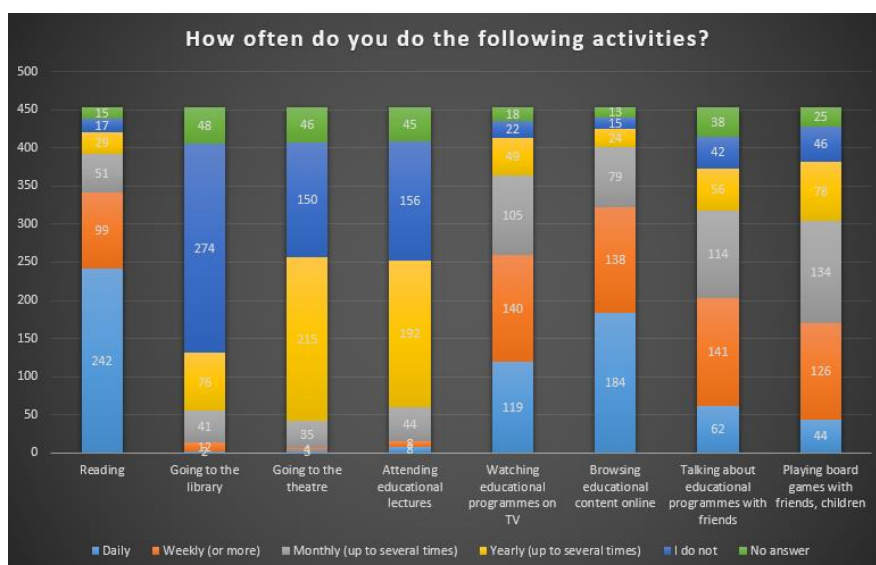
Figure 12. Frequency of literacy activities

The graph clearly shows that there are three types of activity where the answer "I don't usually" appears in a very high proportion. It is true that for these three activities (*going to the library, going to the theatre and attending educational shows were not expected to be daily activities*). It is significant for the research that the activity most frequently mentioned as a daily activity was reading (although it was not specified whether this was print or online). The other two most common activities were *browsing educational content online* and *watching educational shows on TV,* which were not surprising. There are some measurements (not scientifically validated) that show that people nowadays sit in front of the TV for more than 5 hours on average. They mainly watch movies and news programmes. Perhaps TV is a means of recreation and not specifically used by most people to increase their lexical knowledge. It also takes a lot of time out of the 24 hours a day to do business online, to search for information, to build and maintain social contacts. According to some measurements, young people spend more than 3 hours a day on the Internet (mainly on social media). It is therefore understandable that these are the activities that can be increased in terms of literacy levels, which are most often carried out by the research participants.

3.3. Finding correlations between respondents' answers to the questions

To examine the relationships between the questions, this study used two statistical value calculations. One is correlation and the other is cross tabulation analysis.

Often the evaluation of questions stops at the examination of frequency, although it can be more interesting for science to see how two phenomena are related. In the case of tests, this means looking for correlations between the answers to individual questions (e.g. demographic

questions between other questions). Accordingly, mathematical statistical tests can be divided into two groups:

- <u>diversity tests</u>, which aim to detect differences between data series;
- <u>correlation tests</u>, which aim to detect relationships between data series (Lengyelné, 2013)

Correlation is one such method that can be used to describe the relationship between answers to questions. In some cases, correlation can only be calculated between data series with a normal distribution, so to avoid this, we can use rank correlation, the so-called Spearman's rank calculation. The degree of correlation between data can be determined using the table below (Figure 13.).

There are several approaches to infer the relationship from the correlation value		
0		: no linear relationship
0 - 0.2	(-0.2 - 0)	: weak, almost negligible
0.2 - 0.4	(-0,4 - -0,2)	: certain, but weak link
0.4 - 0.7	(-0,7 - -0,4)	: medium correlation, significant relationship
0.7 - 0.9	(-0,9 - -0,7)	: high correlation, significant relationship
0.9 - 1	(- 1 - -0,9)	: very high correlation, strong dependent relationship

Figure 13. Level of correlation

Cross-tabulation (chi-square analysis) is a widely used method of analysis that examines the relationship between two or more variables, or their combined frequency distributions (nominal and/or rank scales of results, but no direction). This requires plotting the responses to two questions in tabular form. The row and column totals are calculated at the end of each row and column, as well as the total. We form a conceptual table by entering the product of the row sum and the column sum divided by the total sum in the space corresponding to each cell. This creates a table that is randomly generated and it is assumed that there is no correlation between the rows. The cross-tabulation analysis is used to test the similarity between the original (generated from measured values) and the derived theoretical table. If this number (significance) is less than a given number (e.g. 0.05), then there is no similarity between the two tables, i.e. there is a correlation between the rows and columns of the original table.

The relationship between community form and the willingness to increase literacy

Since the first survey in 2022 showed that the inhabitants of the sub-region would expect to increase their literacy level through community programmes (Figure 5), the first correlation analysis includes this. The study focuses on the extent to which the willingness to increase literacy levels is associated with the expectation of this through community programmes. In

both cases, the response to the question was on a scale of 1 to 10 (Table 1.). A ranking was constructed based on their frequency, with the correlation between them being as shown below.

Table 1. Responses to questions on agreement with the community form and willingness to increase literacy level, ranking and correlation value.

Order	How much do you agree that community programmes are expected to raise literacy levels?	Value of responses.	How much do you want your literacy level to increase?	Order
9	10	1	1	10
10	2	2	1	9
7	12	3	2	8
8	11	4	3	7
4	66	5	33	6
6	42	6	35	5
3	62	7	72	3
2	92	8	101	2
5	42	9	37	4
1	110	10	165	1

Correlation value:	0,9393939

The correlation value suggests that there is a very strong correlation between the answers to the two questions. That is, those who agree that literacy should be increased through community events are more likely to want to increase their literacy level. This statement cannot be clearly established from this study, only that the frequency of respondents' numerical responses to the two questions is similar. In order to detect a clear answer to the previous hypothesis, a cross tabulation analysis between the two questions had to be performed (Table 2.).

Table 2. Values of responses to questions on agreement with the community form and willingness to increase literacy level, significance value.

		How much do you want to raise your literacy level?									
		1	2	3	4	5	6	7	8	9	10	L. summ
	1	0	0	0	0	1	0	0	2	1	6	10
	2	0	0	0	0	0	0	0	0	1	0	1
	3	0	0	0	2	2	1	2	1	1	3	12
Agreeing	4	0	0	0	0	2	3	2	2	0	2	11
with the	5	0	0	0	0	8	12	9	17	1	19	66
community	6	1	0	0	0	8	3	9	7	5	8	41
form.	7	0	1	1	0	3	2	19	11	3	22	62
	8	0	0	1	1	3	6	17	30	11	23	92
	9	0	0	0	0	2	2	7	13	4	14	42
	10	0	0	0	0	4	6	7	16	10	67	110
	C. summ.	1	1	2	3	33	35	72	99	37	164	447

significance:	1E-09

Elvi táblázat

0,0224	0,0224	0,0447	0,0671	0,7383	0,783	1,6107	2,2148	0,8277	3,6689
0,0022	0,0022	0,0045	0,0067	0,0738	0,0783	0,1611	0,2215	0,0828	0,3669
0,0268	0,0268	0,0537	0,0805	0,8859	0,9396	1,9329	2,6577	0,9933	4,4027
0,0246	0,0246	0,0492	0,0738	0,8121	0,8613	1,7718	2,4362	0,9105	4,0358
0,1477	0,1477	0,2953	0,443	4,8725	5,1678	10,631	14,617	5,4631	24,215
0,0917	0,0917	0,1834	0,2752	3,0268	3,2103	6,604	9,0805	3,3937	15,043
0,1387	0,1387	0,2774	0,4161	4,5772	4,8546	9,9866	13,732	5,132	22,747
0,2058	0,2058	0,4116	0,6174	6,7919	7,2036	14,819	20,376	7,6152	33,754
0,094	0,094	0,1879	0,2819	3,1007	3,2886	6,7651	9,302	3,4765	15,409
0,2461	0,2461	0,4922	0,7383	8,1208	8,613	17,718	24,362	9,1051	40,358

The significance value has become very low, confirming the previous assumption. It can be concluded that if the focus is on increasing the literacy level of the municipality, the residents will be most receptive to this through community events.

The relationship between the school as a location and the willingness to raise literacy levels

It may also be an interesting study to see to what extent those who want to increase their literacy level are willing to accept that the local school should be the place to do so. This is a very important question for further research, because if there is no correlation between these questions, then there is no point in investigating the role of the small school in the development of literacy levels and exploring the possibility of its involvement in their growth (Table 3.).

Table 3. Values of responses to questions on agreement with school as a location and willingness to increase literacy level, significance value.

		How much do you want to raise your literacy level?									
		1	2	3	4	5	6	7	8	9	10	L. summ.
	1	1	0	0	1	0	1	0	1	0	3	7
	2	0	0	0	0	1	1	1	0	0	1	4
	3	0	0	0	0	1	2	2	0	0	2	7
Agreement	4	0	1	0	0	2	3	3	0	2	1	12
with the	5	0	0	0	0	13	5	5	6	2	8	39
school as a	6	0	0	0	0	5	9	15	11	2	7	49
location.	7	0	0	0	1	4	4	21	18	6	5	59
	8	0	0	0	1	2	6	8	35	3	16	71
	9	0	0	1	0	1	0	7	2	13	7	31
	10	0	0	1	0	4	4	10	26	9	112	166
	C. summ.	1	1	2	3	33	35	72	99	37	162	445

significance:	8,80799E-44

Principle table

0,02	0,02	0,03	0,05	0,52	0,55	1,13	1,56	0,58	2,55
0,01	0,01	0,02	0,03	0,3	0,31	0,65	0,89	0,33	1,46
0,02	0,02	0,03	0,05	0,52	0,55	1,13	1,56	0,58	2,55
0,03	0,03	0,05	0,08	0,89	0,94	1,94	2,67	1	4,37
0,09	0,09	0,18	0,26	2,89	3,07	6,31	8,68	3,24	14,2
0,11	0,11	0,22	0,33	3,63	3,85	7,93	10,9	4,07	17,8
0,13	0,13	0,27	0,4	4,38	4,64	9,55	13,1	4,91	21,5
0,16	0,16	0,32	0,48	5,27	5,58	11,5	15,8	5,9	25,8
0,07	0,07	0,14	0,21	2,3	2,44	5,02	6,9	2,58	11,3
0,37	0,37	0,75	1,12	12,3	13,1	26,9	36,9	13,8	60,4

It is clear from the significance value that there is a strong relationship between the willingness to raise literacy levels and the acceptance of school as a place, which merits further investigation.

The relationship between increasing literacy and the level of literacy

When questionnaires are prepared, similar questions are asked quite often in order to ensure the reliability of the answers. This was also used in the present study to ensure that answers to

questions considered important were thoughtful. These questions were related to increasing literacy levels (Table 4.).

Table 4. Correlation between increasing literacy level and its degree, significance value.

		How much do you want to increase your literacy level?										
		1	2	3	4	5	6	7	8	9	10	L. summ.
Do you want to increase your literacy level?	Yes, I've been planning this for a long time, and it would make me feel good to have a more varied, deeper knowledge.	1	0	0	0	12	13	32	73	31	148	310
	I might think about it, although it depends on how much effort I have to put in.	0	0	0	2	17	18	38	26	5	15	121
	No, thank you. I'm perfectly fine as it is, because you can't learn everything anyway.	0	1	2	1	4	4	1	1	1	1	16
C. summ.		1	1	2	3	33	35	71	100	37	164	447

significance:	7,732E-32

Principle table

0,69	0,69	1,39	2,08	22,9	24,3	49,2	69,4	25,7	114
0,27	0,27	0,54	0,81	8,93	9,47	19,2	27,1	10	44,4
0,04	0,04	0,07	0,11	1,18	1,25	2,54	3,58	1,32	5,87

It was important for the research that the answers to the two questions show a strong correlation, so the intention to increase literacy levels among the respondents is real.

The relationship between the intention to raise literacy levels and teacher engagement

The following correlation is also important to examine before further work is carried out. This is whether the intention to raise literacy levels is correlated with the extent to which respondents attribute this task to the teachers who teach in the local school (Table 5.).

Table 5. The value and significance of the extent to which literacy levels have increased and the role of teachers in this.

		How much would you like your literacy level to increase?										
		1	2	3	4	5	6	7	8	9	10	L. summ.
In your opinion, is there a place and a role for local schools and teachers in raising literacy levels?	They would also have a role to play, in cooperation with the local culture and events organiser.	1	1	2	1	24	23	51	66	18	80	267
	Local teachers should act as a flagship on this issue, taking the lead.	0	0	0	1	5	3	15	23	15	66	128
	I wouldn't expect them to solve this problem, as they have enough to do.	0	0	0	1	4	9	6	12	4	19	55
C. summ.		1	1	2	3	33	35	72	101	37	165	450

significance:	0,005155667

Principle table

0,6	0,6	1,2	1,8	20	21	43	60	22	98
0,3	0,3	0,6	0,9	9,4	10	20	29	11	47
0,1	0,1	0,2	0,4	4	4,3	8,8	12	4,5	20

Again, the significance between the theoretical and the actual table is quite small, so it can be concluded that the respondents would like teachers to play a significant role in raising literacy levels.

4. Summary

The purpose of designing a questionnaire for research is to confirm or refute hypotheses about the area under investigation. They can be used to make statements that either confirm or contradict the direction of the research, or they can be used to identify new areas for investigation, raising questions that have not yet been examined. The relationship examined in the present study has not been the subject of any scientific publication to date, so any findings in this area are new.

As a result of the evaluation of the questionnaire, the following findings can be made in relation to the hypotheses:

- Based on the responses of the respondents, there is a need to improve and increase the level of literacy and therefore the first hypothesis can be stated to be confirmed.

- To increase the literacy level in the municipality, the inhabitants would mostly expect it in the form of community events and group activities, although individual activities also appear. The second related hypothesis was only partially confirmed.

- The school as a place and the teachers as important actors in raising the level of literacy are supported and accepted by the majority of the inhabitants of the communes. The third hypothesis is confirmed on the basis of these results.

- AI tools and applications are used by the inhabitants of the study area, but their impact on individual and municipal literacy levels cannot be clearly established at the moment. As a result, the quarters hypothesis has not been confirmed.

5. Directions for further investigation

With the questionnaires under study, only the side that plays a role in increasing the literacy level of the municipality as the subjects of the increase was examined. Further investigations are needed to determine the attitude of the persons and institutions that activate, support and encourage the increase of the literacy level. What tools (pedagogical, information, motivational) can be used to achieve success, wider acceptance and motivation to increase literacy levels.

Possible directions for further analyses and studies:

- interviews with the municipal administration, community education organiser and the headmaster of the small school;

- seeking the opinion of teachers in the municipal schools (teaching methods, forms, tools, motivation);

- to assess the literacy levels of the inhabitants of the municipalities (definition and quantification of the initial situation);

- to assess the existence of competences and skills that have an impact on literacy.

If the results of these studies are combined, it is possible to draw conclusions that could indicate the potential of the local small school in raising the literacy level of the municipality.

References

Andl, H. (2015). Small schools, local societies, education policy. Small schools in Baranya County (PhD thesis). Pécs.

Györgyi, Z. (2012). Scope for education policy in small towns and cities, In A. Orsós & F. Trendl (Szerk.), Útjelzők. Ünnepi kötet pályatársak, kollégák, tanítványok neveléstudományi tanulmányaiból a 70 esztendős Forray R. Katalin tiszteletére (pp. 109-116). PTE BTK.

Báthory, Z., Falus, I. (1997). Pedagogical lexicon, Keraban, Budapest.

suliNova Kht. (2006). Small schools in small villages, Public analysis by the Centre for Education Policy Analysis.

Andl, H. (2012). Small schools and local societies, ELTE Ötvös kiadó.

Németh, Á., Dövényi, Z. (2018). Educated people in space - Is the spatial distribution of graduates* really levelling out?, Területi Statisztika, 58(2), 129–150. https://doi.org/10.15196/TS580201

Utasi, Á. (2012). Village communities and public life: outline of the research, Community and public activity in seven small Hungarian villages in three countries, Belvedere Kiadó. (Projekt száma: 73034, címe: A közösségi kapcsolatok igénye - a demokrácia megújításának esélye). ISBN 978-963-7372-83-4

G. Furulyás, K. (2015). What do we think about literacy?, Kulturális Szemle. Accessed on 23.03.2024: https://kulturalisszemle.hu/3-szam/nemzetkozi-kitekintes/g-furulyas-katalin-mit-gondolunk-a-muveltsegrol

Lengyelné Molnár, T. (2012). Research design, Textbook. Eger.

Farkas, I. (2023). Investigation of the role and potential of small schools in the development of the literacy level of the settlement and the life of the villages in the South-Fejér region, DUNAKAVICS, 11(12), 37-57.

About Author

Imre Farkas, a certified secondary school teacher of computer science and mathematics. For 23 years he has been teaching computer science and mathematics related subjects in the Computer Systems and Control Engineering Department of the Institute of Informatics at the University of Dunaújváros. He study the role and potential of small schools in the development of literacy levels in municipalities, and how this is affected by the emergence and rapid development of artificial intelligence applications.