UNIWERSYTET JANA DŁUGOSZA W CZĘSTOCHOWIE
Podstawy Edukacji 2025, t. 18

http://dx.doi.org/10.16926/pe.2025.18.16

Katarzyna SMOTER
https://orcid.org/0000-0001-5180-6344
Jagiellonian University, Poland

Contact: katarzyna.smoter@uj.edu.pl
How to cite [jak cytować]: Smoter, K. (2025). Note-taking as a Learning Strategy for First-Year Students Majoring in Pedagogy – Pilot Study. *Podstawy Edukacji*, *18*, 267–284.

Note-taking as a Learning Strategy for First-Year Students Majoring in Pedagogy – Pilot Study

Abstract

Note-taking is an integral part of the learning strategy – taking notes involves practising concentration, developing memory skills, selecting and organising teaching material, and critically assessing information. This issue has been the subject of numerous empirical analyses; however, there remains a lack of research involving individuals who are starting their academic education and actively developing individual learning strategies at this stage. A special group is made up of people undertaking education in teaching professions, who (in theory) should become experts in the process of educating children, young people or adults. Therefore, the pilot study described in this article presents how first-year education students perceive note-taking as a personal learning strategy. The results of this study indicated that the most commonly used type of note-taking is linear notes and their variation – outline notes. Handwritten notes were preferred, although a large group also reported taking digital notes. The students overwhelmingly rated characteristics such as legibility, aesthetics, neatness, content layout, and ease of learning from their own notes positively. On the other hand, their innovative nature was rated low. Among the challenges related to note-taking, the following were mentioned: difficulties with concentration and motivation, the need to select material, the pace of classes, the manner of presenting lecture content, and the speed of note-taking required in academic classes.

Keywords: note-taking, education students, strategy, learning, pilot study.

Introduction

Note-taking seems to be a common skill, and its practice begins at an early stage of education. Notes can support a broader understanding of academic

texts, provide an opportunity to repeat and consolidate content, allow knowledge to be structured, and enable its growth and development to be monitored (Domagała-Zyśk, 2017). It is therefore a fully-fledged learning strategy, useful at every stage of education. Despite the seemingly prosaic nature of this activity, note-taking is not always a skill that students possess to a sufficient degree when they begin their academic education. According to van der Meer, they acquire this competence through trial and error at earlier stages of education, which does not necessarily translate into the active development of their competence resources (2011). It is interesting to reflect on how this issue relates to the experiences of Polish students of pedagogy who are just beginning their academic education. Therefore, the pilot study described in this article presents how first-year pedagogy students perceive note-taking as a personal learning strategy. Due to the fact that they are individuals who are required to have expert preparation related to learning and teaching others, we will also reflect on how note-taking fits into the broader context of their university education.

Note-taking as a learning strategy – definitional explanations

The most concise definition of note-taking is recording the most important information during a lecture or while reading a text so that it can be easily accessed later (Jerzyk-Wojtecka, 2013). A note itself is defined as a short text written down in order to remember certain facts or observations (https://wsjp.pl/haslo/podglad/35510/notatka/3939948/zapisek). The verb "to note" means both "to write something down in order to remember it" and "to record the existing state of affairs" (https://sjp.pwn.pl/slowniki/notowanie.html). Note-taking significantly supports cognitive processes, as it requires selecting, prioritising, organising, comparing, evaluating and integrating information (Gryboś, 2021, p. 160). A good note is a kind of '[…] map of the text, facilitating orientation in it, but not losing the reader in details' (Czerniawska, Ledzińska, 2007).[1] All the properties described here mean that it can be treated as an aspect that significantly supports the learning process.

The development and improvement of note-taking skills is included in the current core curriculum for Polish language teaching at all stages of education in Poland (Gryboś, 2021)[2] . Taking notes from literature is one of the elements

[1] All translations into English of the original texts are the author's own translations.

[2] Regulation of the Minister of National Education of February 14, 2017 on the core curriculum for preschool education and the core curriculum for general education for primary schools, including for students with moderate or severe intellectual disabilities, general education for first-level vocational schools, general education for special schools preparing for work, and general education for post-secondary schools. Appendix No. 2. Core curriculum for general ed-

of scientific cognition related to the deliberate observation and analysis of selected fragments of reality (Duraj-Nowakowa, 2002) . In this case, note-taking is a form of theoretical research: learning aimed at gathering knowledge that allows for the construction of generalisations, laws of development and changes in literature (Duraj-Nowakowa, 2002). Despite the categorical presence of this issue, it seems that Polish primary and secondary schools lack a structured model for teaching how to create different types of notes. The main emphasis is placed on their aesthetics and comprehensive content (in accordance with the information provided by the teacher or found in the textbook). Even at the next, academic stage of education, not much time is usually devoted to note-taking. As a result, some of the study skills textbooks available in Poland, aimed at first-year students, actually omit the topic of notes (see, for example, Kuźnar, Towalski, 2020, Hyla, 2014). Among them, there are also publications in which the authors refer, at least briefly, to the issue of note-taking (including creative note-taking) or the topic of mind maps (Andrzejczak, 2014, Cottrell, 2007). Despite significant social changes, note-taking remains a key part of the process of creating academic knowledge structures. Notes are taken, among other things, during classes, when preparing for tasks assigned by the teacher (e.g., presentations), and when using scientific texts. For many students, they are an indispensable tool, and they also support various stages of the teacher's work, facilitating the preparation and delivery of classes (Janowicz, 2011).

As previously indicated, note-taking falls within the scope of learning strategies. In light of the literature on the subject, we can distinguish between metacognitive and cognitive strategies. Metacognitive strategies concern the goal of planning and coordinating activities at a symbolic (mental) level (Ledzińska, 2000, p. 126). These include: planning strategies – e.g., reviewing material, generating questions, monitoring strategies – affecting concentration, as well as regulatory strategies – e.g., those related to revisiting specific content, reviewing material (see Dembo, 1997). Cognitive learning strategies are defined as memory strategies – these are 'procedures for organising situations and memory material, used by the subject to memorise and/or recall information' (Czerniawska and Ledzińska, 2007, p. 241). These include: repetition strategies, e.g., rewriting material; elaboration strategies, e.g., mnemonics, creating analogies; and organisation strategies, e.g., grouping data categories and concept maps (Rzońca, 2023, after Dembo, 1997). Most of the activities listed here affect the process of note-taking. According to R. Arends, there are four types of learn-

ucation for primary schools (Journal of Laws 2017, item 356, as amended). and Regulation of the Ministry of National Education of January 30, 2018 on the core curriculum for general education, technical secondary schools, and second-level vocational schools. Appendix No. 1. Core curriculum for general education for four-year high schools and five-year technical secondary schools (Journal of Laws 2018, item 467, as amended).

ing strategies: repetition strategies, metacognitive strategies, elaboration strategies and organisation strategies (each of which can be further detailed) (Arends, 1994, pp. 488-499, Szymczak, 2012). Note-taking becomes a particularly important element of elaboration and organisation strategies. The essence of the former is to operationalise information, which facilitates its encoding and allows for a more effective transfer of data from short-term to long-term memory, as well as the generation of associations and connections between what is known and what is remembered (Arends, 1994). The essence of the second strategy, organisation, is for the individual to arrange the material into a specific structure, which is given individual meaning. Examples of this include creating lists of important issues or tables of contents and mind maps (Arends, 1994).

Types of notes

Among the types of notes, we can initially distinguish between linear and non-linear notes. The former, which are the most commonly used, are similar to printed text written 'line by line' (Kasperowicz, 2014). Some people believe that only notes containing as many words as possible in complete sentences will help them remember information in a given field (especially if it is new information). In this approach, we try to write down as much as possible so that we can later use the comprehensive material. However, creating such notes can resemble rewriting a text rather than actively processing it. Linear notes are also often considered uninteresting in their 'basic' form, tedious and monotonous. It is possible to break this pattern and give these notes an 'author's commentary' by enriching them with elements that increase their attractiveness. You can write down the text using coloured pens and highlighters, change the structure of the text, divide it into paragraphs or paragraphs and margins (Gębuś, 2014). Following this lead, people who develop non-linear notes use a variety of methods – they use drawings, symbols, charts, diagrams, tables, different font sizes, stickers and coloured sticky notes.

Another classification, describing characteristics similar to the previous ones, distinguishes between summary and outline types of notes and mind maps (Cieciura, 2024). The former can be associated with linear notes, as they refer to the literal, source-compliant recording of read or heard content, which is used, among other things, for quotations, definitions of specific concepts, important statements or examples of phenomena. The disadvantage of this method of note-taking is that it is time-consuming, makes the mind lazy during the note-taking process, and often makes it difficult to learn from the resulting material. The second type is outline notes containing the most important content forming an organised, well-thought-out system – the content is hierarchi-

cally systematised: the main idea, theses and points indicating specific issues. In this type of notes, you can use highlights, underlining, colours, symbols, etc. This type of note-taking activates the author to a greater extent, can allow for better memorisation and understanding of the material, but requires the ability to select content (Cieciura, 2024). The last of the types highlighted here is a mind map: a diagram representing interconnected words, ideas or tasks, arranged around the main idea/keyword, placed in the centre of the map (see Eppler, 2006, Manoharan, 2008). It creates a diagram of connections between keywords selected by the author, which act as 'verbal hooks' containing a broader content load, triggering associations with the main category, which can allow the structure of the issue to be reconstructed. The map allows for comprehensive and concise content development: encoding and subsequent decoding of symbols, hierarchising and assigning meanings to concepts (Buzan, 2007). The creation of mind maps is subject to specific rules: they are created on a smooth, horizontally oriented sheet of paper, using numbering and hierarchisation, with words of different sizes… The concept of visual note-taking associated with mind maps has a broader meaning and can be associated with notes that include various graphic elements (there is no need for the specific structuring required in mind maps). The creative note-taking methods described above correspond to the dual coding theory present in the literature on the subject, which indicates that the use of both verbal and visual channels increases the effectiveness of information coding (Amirian, Heshmatifar, 2013, Rodriguez, Sadoski, 2000).

In an era of diverse technological inventions, students are looking for new solutions to facilitate the collection of academic content. The move away from traditional note-taking is accompanied by 'preserving' information in other ways – the long-established practice of photocopying academic texts or notes taken by colleagues, and taking photographs of text and visual materials (e.g., lecture slides) using mobile phones (not always taking into account copyright issues and the prohibition on reproducing copyrighted content) (Jerzyk-Wojtecka, 2013). Other important issues that often arise in discussions are methods of note-taking that use technological conveniences. Today, note-taking is often mediated by electronic devices and programmes. This method of note-taking is also facilitated by applications such as Xmind (which allows you to create mind maps), Obsidian (which allows you to create notes and connect them into a complex network), Scrble, Roam Research, OneNote, Thunk Notes, Note-taking AI, Notion, Evernote, Google Keep, FirmBee (https://www.ifirma.pl/blog/aktualnosci/aplikacja-do-robienia-notatek). The specific context determines AI-related systems – summarising, note-taking, or changing text into any form. It is precisely the issue of multi-stage note-taking using artificial intelligence that is currently an important research topic (see, for example, Karunarathna, Dilshan, Wanniarachchi, Bimsara, Piyatilake, 2024). Other significant areas addressed in empiri-

cal analyses in recent years have included the negative effects of using laptops in academic classes (Fried, 2008), working memory, verbal abilities, and prior knowledge as predictors of the quality of students' notes taken during online lectures (Hadwin, Kirby, Woodhouse, 1999), and scientific papers have also compared note analysis strategies using different methods (Siegel, 2018). However, there is still a lack of research involving people who are just beginning their academic education and actively developing individual note-taking strategies, which has become the subject of this study.

Methodology of own research

The research carried out for the purposes of this work was of a pilot and exploratory nature. The main problem was formulated in the form of a question: How do first-year education students perceive note-taking as an individual learning strategy? The subject of the analysis was the perception of note-taking as an individual learning strategy by first-year students of pedagogy. The theoretical-practical and practical-implementation objectives were indicated here (Skorny, 1984). The first was to present the ways in which note-taking is perceived in the context of preferences for the type of notes, strategies for creating them, evaluation of one's own notes, factors influencing the style of note-taking, and challenges related to their creation. The practical and implementation objective, on the other hand, concerned the indication of preliminary recommendations for academic teaching related to the development of note-taking skills.

The study involved 109 students of pedagogy and arts education from Polish universities (Jagiellonian University, University of Szczecin, Jan Długosz University in Częstochowa, Maria Grzegorzewska University and University of the National Education Commission in Krakow). The students (mostly women with similar demographic profiles, living in large cities) chose the following fields of study: general pedagogy (general academic profile), preschool and early school pedagogy, special pedagogy, social rehabilitation pedagogy, pedagogy: cultural animation, arts education in the field of visual arts, care and educational pedagogy, and school pedagogy. The study was conducted at the end of the first academic semester of the 2024/2025 academic year and during the winter examination session. An original questionnaire was used, which included descriptive and multiple-choice questions as well as elements of the Likert scale, which made it possible to detect differences in the assessment of individual characteristics of note-taking. The survey was conducted using the CAWI technique on the google forms platform.

Presentation, analysis and interpretation of own research results

The first question concerned the frequency of use of different types of notes, including mind maps, traditional linear notes, Cornell notes, and sketchnoting (graphic note-taking). In addition, it was possible to select and describe methods other than those listed or to indicate that no notes were taken.

The data showing the students' choices is presented in Chart 1.

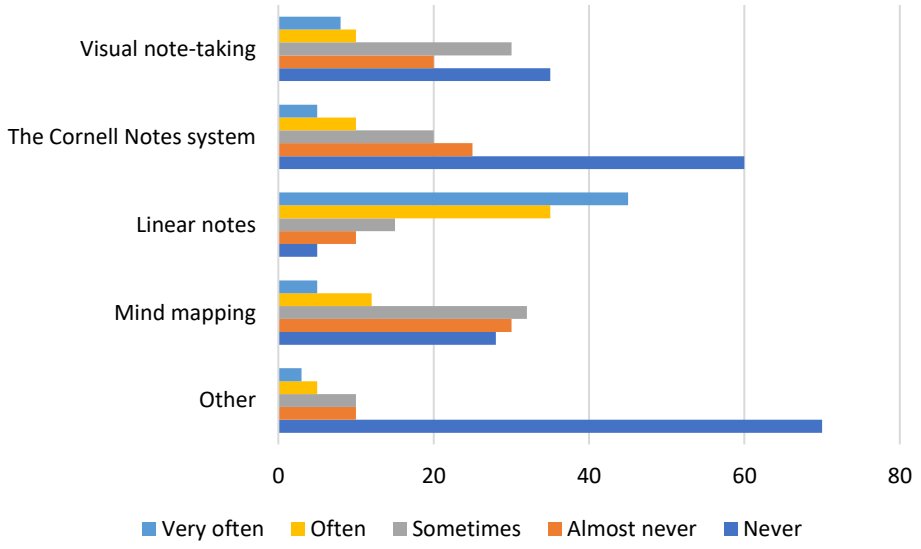

Chart 1
Frequency of use of different note-taking styles
Source: own research

Almost every respondent took personal notes with varying frequency. As shown in Chart 1, the most popular style of note-taking was linear notes (85% of responses 'often' and 'very often'), while mind maps (16% of responses 'often' and 'very often') and notes created using the Cornell method (only 8% of responses "often" and 'very often') proved to be the least popular. Respondents had the opportunity to clarify their choice or describe another strategy they used. Numerous responses indicated the importance of adding elements to enrich the text – some of the students surveyed create their own modifications of the above-mentioned styles, which is described as follows:

> *I sometimes* […] *combine mind maps with the traditional method. In each of the links* (*rectangles*)*, I put a few lines of text* (*definitions, points*)*, connect these links with arrows and sometimes add colours.* (Female, Pedagogy, Jagiellonian University)

I often use simple or curved arrows in traditional notes, e.g., I write a fairly long sentence and there are arrows here and there […] (Female, Preschool and Early School Education, Jagiellonian University)

A small group creates types of notes not mentioned in the question, as evidenced by the following statements:

My notes are fragments of thoughts on scraps of paper (Female, Rehabilitation education, Maria Grzegorzewska University)

I create notes from sub-points combined with a chain method of associations; these are notes such as 'questions and answers'. (Female, Pedagogy, Jagiellonian University)

I write notes on different sides: left, centre, right. Or I create branches on two sides with a blank centre. (Female, Preschool and Early School Education, The University of Szczecin)

Another aspect was the self-assessment of the students' notes. The respondents could evaluate characteristics such as: the legibility of the notes, their neatness, the ease of learning from their own notes, their aesthetic value, the innovative nature of the notes, and the way the content was organised.

These data are presented in Table 1.

Table 1
Characteristics of notes as assessed by the respondents

Characteristics of notes	Total number of responses "I rate it highly and very highly"
Legibility	62,3%
Ease of learning from notes	70,6%
Aesthetics of notes	62,4%
Innovativeness of notes	21,1%
Content layout	60,6%
Carefulness of notes	65,2%

The percentages do not add up to 100% because the respondents evaluated different characteristics of the notes. Source: own research.

As can be seen from the data presented in the table, the respondents rated their own notes positively in relation to almost all criteria, except for innovation – only 1/5 of the respondents rated this feature highly. Interestingly, characteristics such as legibility and aesthetics were rated positively, even though in one of the subsequent open-ended questions, a significant proportion of students had reservations about these characteristics, describing them as a challenge.

Another important issue was the methods of note-taking and strategies for using notes. The majority of students declared that they most often write them by hand (78% of responses 'often' and 'very often'). A smaller, but still very significant group indicated the frequency of using a laptop or other electronic devices when taking notes (about 58% of responses "often" and 'very often'). Only

1/5 of students declared that they copied notes from others and treated them as ready-made study material (approximately 21% answered 'often' and 'very often'). Slightly less than one-third of students indicated that they create notes based on notes borrowed from their fellow students (approximately 30%). These data are presented in Chart 2.

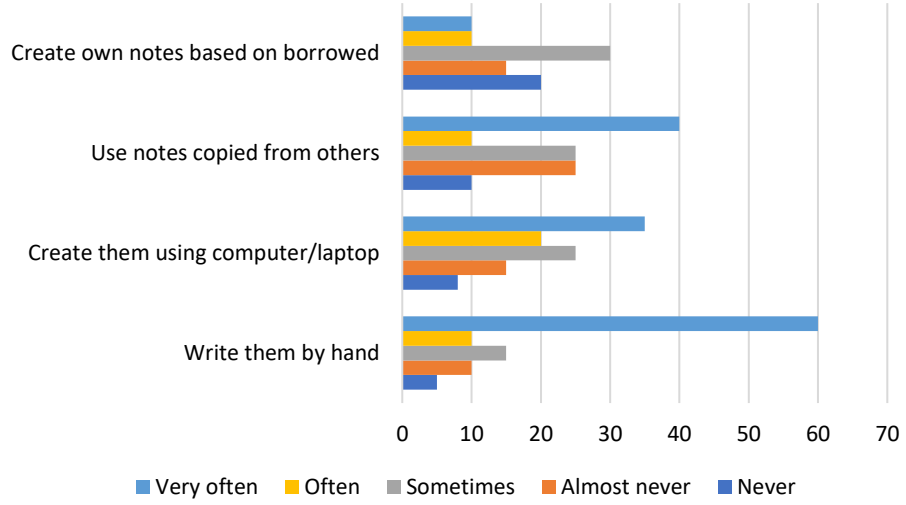

Chart 2
Note-taking methods and note-use strategies among respondents
Source: own research

A relatively large group of respondents declared that they take notes using a laptop or tablet. They justified this with aesthetic considerations, increased legibility, and the possibility of structuring the text. However, the positives presented here should be compared with the results of research: Fried (2008) pointed out that the use of laptops distracted both their users and other students. The level of laptop use was also negatively correlated with student learning indicators, including self-assessment of understanding of the material and final exam results (Piolat, Olive, Kellogg, 2005). Handwriting, on the other hand, is valued in many different ways, with emphasis placed on, among other things, its multidimensional sensory-motor processes, which significantly influence the process of learning about reality and improving memory (Longcamp M., Velay J.-l., Wise Berninger V., Richards T., 2017, Mangen, Velay, 2010). These issues are certainly worth paying more attention to during academic classes.

The respondents were also asked in an open question what (or who) had the greatest influence on their current note-taking style. The students' answers revealed a wide range of categories, among which individual searches and prefer-

ences dominated (thinking about learning material, searching for the most effective ways of note-taking, often by trial and error, creating notes in different styles and choosing those that are most appropriate). Relatively few responses revealed inspirations related to specific individuals (school teachers, colleagues) and trends present in social media (i.e. video tutorials posted on Instagram, TikTok and Pinterest). Interestingly, no literature was mentioned here, e.g., methodological textbooks aimed at first-year students. The few statements indicate that some students had not previously considered this issue, treating note-taking as a largely intuitive process.

The surveyed students also responded to statements relating to the style and strategy of note-taking, indicating how often they engage in various note-taking practices. For this purpose, ten statements were selected, which were the result of the author's analysis of the literature on the subject. These statements are shown in the table below (Table 2).

Table 2
Frequency of activities accompanying note-taking in the statements of the surveyed students

Practices accompanying note-taking	**Total number of "often" and "very often" responses**
During lectures, I try to transcribe the content "word for word."	58%
When taking notes in class, I try to summarize and shorten the content on an ongoing basis.	53%
I create notes – outlines (I use, for example, numbering of content, writing in points and subpoints).	91%
I use graphic elements: drawings, diagrams, symbols…	42%
I write down content in different colors or underline/highlight parts of my notes using colored highlighters.	70%
When writing notes, I refer to additional content beyond what is provided by the lecturer.	21%
I write down content in a rather chaotic manner.	39%
I make a "first draft" – later I create another note from it.	40%
I also create personal notes from texts assigned by the teacher that I have read for class.	37%
After taking notes in class, I rewrite them more than once to learn them effectively.	27%

The percentages do not add up to 100% because respondents could give more than one answer.
Source: own research

According to this data, a large number of students take notes in the form of summaries (91%), and writing down content using different colours or highlighting with highlighters is also very popular (70% of responses). More than

half of the respondents also declare that they meticulously transcribe the content of presentations given during lectures, and more than half of the students surveyed summarise and modify their notes while taking them. Relatively few respondents chose the strategy of rewriting as a way of memorising academic content.

The respondents also answered an open-ended question, describing the challenges associated with note-taking. The answers focused on five areas categorised as follows:

— **difficulties related to concentration (and divided attention), focus, and motivation to make the effort to take notes**
This issue is illustrated by the following statements from students:

Taking notes is a monotonous activity for me. I find it difficult to concentrate on taking notes. (Female, Pedagogy, Jagiellonian University)

I suffer from a lack of motivation to take notes, problems with concentration, and with longer texts, it is more difficult to take this kind of notes in bullet points, which is how I learn best. (Female, Preschool and Early School Education, Jan Długosz University in Częstochowa)

I often cannot focus on taking notes and listening at the same time. (Female, Pedagogy – cultural animation, The University of Szczecin)

— **the nature of the educational content: its quantity, presentation, and comprehensibility for students**
This aspect was addressed as follows:

The scientific language, which I am not yet used to, is definitely a challenge. (Female, pedagogy – cultural animation, University of Szczecin)

There is a lot of material to take notes on, and it often turns out later that about half of it is unnecessary. (Female, Pedagogy, Jagiellonian University)

We have too much information from different sources, and I am never sure which information is most accurate. (Female, art education in the field of visual arts, Maria Grzegorzewska University)

— **the pace of the classes and the resulting speed of note-taking**
This challenge was described as follows:

One of the biggest challenges is that the lecturer speaks too fast. Sometimes I can't keep up with the presentation. (Female, Pedagogy, Jagiellonian University)

The difficulties (*if any*) *stem solely from the way the classes are conducted. There is a lot of text on the presentation slides, and not enough time to read it.* (Female, Rehabilitation education, Maria Grzegorzewska University)

The speed of information transfer is definitely a challenge, it is often impossible to write everything down, too much important information is given in quick succession. (Female, care, educational and school pedagogy, Maria Grzegorzewska University)

— **the need to select teaching material**

When describing this difficulty, the students surveyed pointed to the following aspects:

> *It's not like in secondary school, sometimes you have to pick up on the content yourself, which I'm not used to yet.* (Female, Preschool and Early School Education, University of the National Education Commission in Krakow)

> *It is difficult to assess which information is most important and should be included in the notes; you need a sense of what is most important*. (Female, Care and Education Pedagogy and School Pedagogy, Academy of Special Education)

> *I feel uncertain in my subjective assessment of which knowledge is more important for the exam* (*it is an internal conflict: should I focus more on the knowledge that will be expected of me, or on the knowledge that interests me, potentially lowering my exam result for the entire material*). (Female, Rehabilitation education, Academy of Special Education)

— **legibility, aesthetics and organisation of the content included in the notes**

In this context, students pointed out the following challenges:

> *Sometimes I have to rewrite my class notes several times because they don't look the way I want them to, which is time-consuming.* (Female, Preschool and Early School Education, Jagiellonian University)

> *I always make rough notes in class and then rewrite and correct them, etc., and it is precisely this process of making clean notes that is often a challenge.* (Female, Preschool and Early School Education, Jan Długosz University in Czestochowa)

> *The biggest challenge for me is my handwriting, which is difficult to read.* (Female, Care, Education, and School Pedagogy, Maria Grzegorzewska University)

The requirement to write neatly, instilled at early stages of education, may encourage students to seek new ways of taking notes (or to choose programmes and web applications that support this process). All this because of handwriting that is considered ugly, in their own opinion. Numerous statements by the respondents show that they focus on making their notes not only legible, but also 'neat'. Cognitive and motivational factors, the selection and organisation of information, and the characteristics of academic teachers, who are not always sufficiently prepared to work with first-year students, representatives of Generation Z, also pose a challenge for students.

The issues presented in this text provide preliminary information on how pedagogy students new to the academic world perceive the process of note-taking. The data presented shows that most of them reflect on the process of note-taking, although they most often take linear notes, a large proportion of them give them an original character by modifying them in various ways. They highly value the accuracy and legibility of their notes, while critically assessing their innovativeness. Despite the popularity of digital notes, a significant number of respondents still prefer handwritten notes. Faced with individual chal-

lenges and external factors (such as complex scientific language, the pace of classes, and the way lecturers present material), they seem to develop their own solutions, often through trial and error. They draw inspiration from, among other things, their previous experiences, people who are important to them, and materials posted on social media, but they do not use textbooks describing skills useful in studying.

Referring to the research results obtained, it is worth mentioning the results of analyses carried out by other authors on some of the issues covered in the pilot study in question. Not many similar studies have been conducted, but we can cite, for example, a study carried out on a large group by Peverly and Wolf (2019), which shows that 96.5% of British students of various fields, like their Polish counterparts, take handwritten notes at least occasionally, and more than half of them sometimes or often create digital notes. When it comes to assessing note-taking skills, reference can be made to the analyses by Morehead, Dunlosky, Rawson, Blasiman, & Hollis (2019), in which almost 90% of young respondents, much more than in the comparable Polish study, declared that they positively value their own notes (on the other hand, according to the cited study, as many as 58% of them would like to improve their skills in this area). In turn, the challenges related to note-taking described by Polish students were similarly outlined by New Zealand first-year students of various fields of study (they concerned, among other things, difficulties in organising and selecting information), which in many cases was also associated with their expectation of receiving ready-made materials from teachers (van der Meer, 2011).

To summarise these threads, it should be noted that the results presented in this text provided preliminary information about the phenomenon under consideration and allowed us to identify issues that will be addressed in the main study. The questionnaire will be supplemented with elements related to the presence of communication technologies (applications and programmes supporting note-taking) and AI. Despite the fact that virtually 100% of students indicated that they take notes during their studies, the question of whether, in the context of the growing availability of various types of data, personal notes will continue to be an effective way of collecting, recording, deepening and managing knowledge is becoming increasingly relevant (Gryboś, 2021). This issue is illustrated by one of the respondents' statements: 'In most situations, I do not take notes. I consider it a suboptimal solution in times of easy access to the internet, AI, recordings (e.g., of lectures), and presentations.' The 'suboptimality' pointed out here is an important issue and should certainly be taken into account in research. There are also plans to expand the analyses to include broader strategies for the context of note-taking and note-use. The experiences of students in subsequent years of study are also worth exploring, as this may

reveal further prospects for competence development at other stages of academic education.

Conclusion

Raising awareness of the role and purpose of taking individual notes is important in developing text-creating competence, which is extremely important for students of pedagogy, as it is the ability to produce and receive various communicative events (Duszak, 1998, p. 199). Note-taking does not have to be associated with the mechanical and unreflective process of writing down the lecturer's words. The development of the discussed competences should be treated on a par with other academic skills and must be combined with them. It is a constitutive educational practice that is a path to lifelong learning: it can allow for the development of reflectiveness, critical thinking, and deeper processing of the content being studied (Vlieghe, Zamojski 2021). Seminar classes and workshops devoted to developing basic study competences will be an adequate context for this task. The programme of such classes cannot ignore the challenges associated with note-taking, as indicated by the respondents. These areas should be present not only in classes devoted to study methodology, although they should play a key role in these academic meetings. Nor can they be separated from other areas of student competence. It is necessary to initiate a discussion on what promotes and what hinders the development of academic competences, including note-taking skills. It is also necessary to systematically familiarise students with different types of academic texts, practising paraphrasing, developing attention to precision in note-taking, using visualisation methods and other techniques for working with text (based on educational games, the Pomodoro technique), and exercises for relaxation, motivation, concentration, and the development of critical thinking in the reception of text. Last but not least, it will also be important to be aware of powerful individual distractors and to appreciate the role of breaks, regular physical activity, proper diet and hydration. When analysing the challenges associated with note-taking identified by students, it seems reasonable to 'go back to basics' and try to understand what the process of note-taking is in a cognitive and developmental context. It is a creative, active process that is worth exploring. It is worth the effort to seek answers to how this process can be implemented individually – modifying it and adapting it to one's needs, which can generate a break from non-developmental patterns and habits and the development of necessary academic resources.

References

Amirian, S. M. R., & Heshmatifar, Z. (2013). The impact of using electronic dictionary on vocabulary learning and retention of Iranian EFL learners. *International Journal of Research Studies in Educational Technology*, *1*(1), 35–44; https://doi.org/10.5861/ijrset.2013.384.

Andrzejczak, A. (2014). *Metodyka studiowania*. Poznań: Wydawnictwo Uniwersytetu Ekonomicznego w Poznaniu.

Arends, R. I. (1994). *Uczymy się nauczać*. Warszawa: Wydawnictwa Szkolne i Pedagogiczne.

Buzan T. (2007). *Mapy myśli.* Łódź: Wydawnictwo JK.

Cieciura M. (2024). *Umiejętności akademickie w pigułce*. Warszawa: Akademia Ekonomiczno-Humanistyczna.

Cottrell, S. (2007). *Podręcznik umiejętności studiowania*. Poznań: Zysk i S-ka.

Czerniawska, E., & Ledzińska, M. (2007). *Jak się uczyć?* Bielsko-Biała: ParkEdukacja.

Dembo M. (1997). *Stosowana psychologia wychowawcza.* Warszawa : Wydawnictwa Szkolne i Pedagogiczne.

Domagała-Zyśk, E. (2017). Notatki jako forma wsparcia edukacji studentów i uczniów niesłyszących i słabosłyszących. *Niepełnosprawność – Zagadnienia, Problemy, Rozwiązania*, *23*(2), 23–37.

Duraj-Nowakowa, K. (2002). *Studiowanie literatury przedmiotu.* Kraków: Wydawnictwo Uniwersytetu Jagiellońskiego.

Duszak, A. (1998). *Tekst, dyskurs, komunikacja międzykulturowa*. Warszawa: Wydawnictwo Naukowe PWN.

Eppler, M. J. (2006). A comparison between concept maps, mind maps, conceptual diagrams, and visual metaphors as complementary tools for knowledge construction and sharing. *Information Visualization*, *5*(3), 202–210; https://doi.org/10.1057/palgrave.ivs.9500131.

Fried, C. B. (2008). In-class laptop use and its effects on student learning. *Computers & Education*, *50*(3), 906–914; https://doi.org/10.1016/S0360-1315(06)00143-6.

Gębuś, D. (2014). Zastosowanie map myśli w procesie dydaktycznym. *Edukacyjna Analiza Transakcyjna*, *3*, 139–151; https://doi.org/10.16926/eat.2014.03.08.

Gryboś, M. (2021). Notatka na lekcjach języka polskiego: (nie)obecność – perspektywy – twórczość. *Kształcenie Literackie. Dydaktyka Polonistyczna*, *16*(7), 160–174; https://doi.org/10.15584/dyd.pol.16.2021.12.

Hadwin, A. F., Kirby, J. R., & Woodhouse, R. A. (1999). Individual differences in note-taking, summarization and learning from lectures. *Alberta Journal of Educational Research*, *45*(1), 1–17.

Hyla, M. (2014). *Akademicki savoir – vivre*, https://us.edu.pl/student/wp-content/uploads/sites/3/COS/Pliki-tekstowe/akademicki_savoir_vivre_1.pdf.

Ifirma.pl. (2019). Aplikacja do robienia notatek. https://www.ifirma.pl/blog/aktualnosci/aplikacja-do-robienia-notatek/.

Janowicz, M. (2011). Wykorzystanie map myśli w dydaktyce, *Folia Pomeranae Universitatis Technologiae Stetinensis*, *287*(3), 65–72.

Jerzyk-Wojtecka, J. (2013). Notatki? Zrób to sam. In: J. Płuciennik, & K. Klimczak (eds.), *Twórczy uniwersytet, twórczy student* (pp. 89–95). Łódź: Wydawnictwo Uniwersytetu Łódzkiego. https://dspace.uni.lodz.pl/bitstream/handle/11089/2781/Tworczy%20Uniwersytet.pdf.

Kasperowicz, A. (2014). Wykorzystanie mapy myśli jako narzędzia wspomagającego pamięć w nauczaniu rachunkowości. *Folia Pomeranae Universitatis Technologiae Stetinensis, Oeconomica, 311*(75)2, 80–91.

Karunarathna, A. W. R. P., Premarathna, T. U. M. N., Dilshan, R. G. S., Wanniarachchi, W. A. K. H. R., Bimsara, Y. M. C. N., & Piyatilake, I. T. S. (2024). Voicense: AI-powered lecture note generation tool. In 2024 9th International Conference on Information Technology Research (ICITR) (pp. 1–6). IEEE; https://doi.org/10.1109/ICITR64794.2024.10857774.

Kuźnar, A., & Towalski, R. (2020). *Wprowadzenie do metodyki studiowania: Podręcznik dla studentów Szkoły Głównej Handlowej w Warszawie*. Warszawa: Oficyna Wydawnicza SGH.

Ledzińska, M. (2000). Uczenie wykraczające poza warunkowanie. In: J. Strelau (eds.), *Psychologia. Podręcznik akademicki*. T. 2 (pp. 117–136). Gdańskie Wydawnictwo Psychologiczne.

Longcamp, M., Velay, J.-L., Wise Berninger, V., & Richards, T. (2017). Neuroanatomy of handwriting and related reading and writing skills in adults and children with and without learning disabilities: French-American connections. *Pratiques,* 171–172. http://pratiques.revues.org/3175.

Manoharan, P. K. (2008). *Education & personality development.* New Delhi: APH Publishing.

Mangen, A., & Velay, J.-L. (2010). Digitizing literacy: Reflections on the haptics of writing. In: M. Hosseini Zadeh (eds.), *Advances in haptics*. IntechOpen; https://doi.org/10.5772/871.

Morehead, K., Dunlosky, J., Rawson, K. A., Blasiman, R., & Hollis, R. B. (2019). Note-taking habits of 21st Century college students: Implications for student learning, memory, and achievement. *Memory, 27*(6), 807–819; https://doi.org/10.1080/09658211.2019.1569694.

Peverly, S., & Wolf, A. (2019). Note-taking. In: J. Dunlosky, & K.A. Rawson (eds.), *The Cambridge Handbook of Cognition and Education* (pp. 320–355). New Jork: Cambridge University Press.

Piolat A., Olive T., & Kellogg R.T. (2005). Cognitive effort during note-taking. *Applied Cognitive Psychology*, *19*, 291–312; https://doi.org/10.1002/acp.1086.

PWN (n.d.). Notowanie. Słownik języka polskiego PWN. https://sjp.pwn.pl/slowniki/notowanie.html.

Rodriguez, M., & Sadoski, M. (2000). Effects of rote, context, keyword, and context/keyword methods on retention of vocabulary in EFL classrooms. *Language Learning*, *50*(2), 385–412; https://doi.org/10.1111/0023-8333.00120.

Rozporządzenie Ministra Edukacji Narodowej z dnia 14 lutego 2017 roku w sprawie podstawy programowej wychowania przedszkolnego oraz podstawy programowej kształcenia ogólnego dla szkoły podstawowej, w tym dla uczniów z niepełnosprawnością intelektualną w stopniu umiarkowanym lub znacznym, kształcenia ogólnego dla branżowej szkoły I stopnia, kształcenia ogólnego dla szkoły specjalnej przysposabiającej do pracy oraz kształcenia ogólnego dla szkoły policealnej. Załącznik nr 2. Podstawa programowa kształcenia ogólnego dla szkoły podstawowej (Dz.U. 2017, poz. 356 ze zm.).

Rozporządzenie MEN z dnia 30 stycznia 2018 roku w sprawie podstawy programowej kształcenia ogólnego, technikum i branżowej szkoły II stopnia. Załącznik nr 1. Podstawa programowa kształcenia ogólnego dla czteroletniego liceum i pięcioletniego technikum (Dz.U. 2018, poz. 467 ze zm.).

Rzońca, E. (2023). Strategie uczenia się uczniów w edukacji wczesnoszkolnej w świetle badań. *Edukacja Elementarna w Teorii i Praktyce, 1*(68), 11–26; https://doi.org/10.35765/eetp.2023.1868.01.

Siegel, J. (2018). Did you take "good" notes?: On methods for evaluating student note-taking performance. *Journal of English for Academic Purposes*, *35*, 85–92; https://doi.org/10.1016/j.jeap.2018.07.001.

Skorny, Z. (1984). *Prace magisterskie z psychologii i pedagogiki. Przewodnik metodologiczny dla studiujących nauczycieli*. Warszawa: WSiP.

Szymczak, J. (2012). Świadome i autentyczne uczestniczenie w procesie uczenia się: Specyfika i znaczenie strategii uczenia się. Uniwersytet Kazimierza Wielkiego. https://repozytorium.ukw.edu.pl/handle/item/1762.

Tomaszczyk, J. (2019). Cyfrowe narzędzia zarządzania informacją własną. *Fides. Biuletyn Bibliotek Kościelnych*, *25*(1), 189–202. https://www.ceeol.com/search/viewpdf?id=906016.

Van der Meer, J. (2011). Students' note-taking challenges in the twenty-first century: Considerations for teachers and academic staff developers. *Teaching in Higher Education*, *17*(1), 13–23; https://doi.org/10.1080/13562517.2011.590974.

Vlieghe, J., & Zamojski, P. (2021). Entering the world with notes: Reclaiming the practices of lecturing and note making. *Educational Philosophy and Theory*, *53*(13), 1388–1398; https://doi.org/10.1080/00131857.2020.1743271.

WSJP.pl (n.d.). Notatka. Wielki słownik języka polskiego. https://wsjp.pl/haslo/podglad/35510/notatka/3939948/zapisek.

Notowanie jako strategia uczenia się studentów pierwszego roku pedagogiki – badania pilotażowe

Streszczenie

Notowanie jest nieodłącznym elementem strategii uczenia się – tworzenie notatek wiąże się z ćwiczeniem koncentracji uwagi, rozwijaniem umiejętności zapamiętywania, selekcji i organizowania materiału dydaktycznego oraz krytycznego odbioru informacji. Zagadnienie to było przedmiotem licznych analiz empirycznych, jednak wciąż odnotowuje się deficyt badań prowadzonych z udziałem osób rozpoczynających kształcenie akademickie, aktywnie rozwijających na tym etapie indywidualne strategie uczenia się. Szczególną grupę stanowią osoby podejmujące edukację w zawodach pedagogicznych, które (w założeniach) powinny stawać się ekspertami w procesie kształcenia dzieci, młodzieży lub dorosłych. W związku z tym, w opisanym w tym artykule badaniu pilotażowym, przedstawiono, w jaki sposób studenci pierwszego roku studiów pedagogicznych postrzegają notowanie jako osobistą strategię uczenia się. Wyniki tych badań wskazały, że najczęściej stosowanym rodzajem notowania są notatki linearne i ich odmiana – notatki konspektowe. Preferowano odręczny sposób notowania, choć liczna grupa deklarowała również, iż często tworzy notatki cyfrowe. Osoby studiujące w przeważającej mierze pozytywnie oceniały charakterystyki takie, jak: czytelność, estetyka, staranność, sposób rozplanowania treści i łatwość uczenia się z własnych notatek. Nisko waloryzowano z kolei ich nowatorski charakter. Wśród wyzwań związanych z notowaniem wymieniano trudności ze skupieniem uwagi i motywowaniem się, konieczność selekcji materiału, tempo prowadzenia zajęć, sposób prezentacji wykładowych treści oraz wymaganą na zajęciach akademickich szybkość zapisu informacji.

Słowa kluczowe: notowanie, studenci pedagogiki, strategia, uczenie się, pilotaż.