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new concepts and modern solutions**

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HANDOUTS AS A MICROCYCLE OF ACADEMIC LECTURE IN THE DIGITAL AGE

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The traditional approach to teaching in higher education was based on lectures in which the teacher is an expert and the student is a passive recipient of knowledge. Although a lecture is the most commonly used pedagogical approach in higher education, in recent years it has been noted that lectures can be ineffective if they are overloaded with too much information. In this case, students are overloaded with details, and time management becomes a problem.

The study of the lecture as a genre of academic discourse, in particular, the American one, indicates that the lecture has the status of a macrocycle and consists not only of elements, but also of a number of microcycles. These microcycles include presentation, electronic compendium and handout.

There is serious debate about which types of lecture presentation styles are best for student learning. Although PowerPoint is one of the easiest presentation apps, not all teachers find it the best choice for classroom training [1]. Some faculty members

still prefer the “chalk-and-talk” method or today’s contemporary version (eg, document cameras and smart boards), in which important information is written in front of the classroom and ideas are expanded on verbally. This lecture format is touted as improving communication and encouraging good note-taking skills [2]. Each teaching platform has its own positives and negatives, with student format preference differing [3]. Each format alters how students take notes, and affects the speed and pace of doing so. Regardless of the format, students perceive handouts to follow in the audience and to use as a reference as beneficial.

Handouts are useful aids for student note-taking and learning [4]. Thus, a key question educators struggle with is not whether to provide handouts, but how much information they should contain and in what format they should be.

There is debate around whether students learn better by rewriting lectures in their own words or having handouts prepared by the lecturer so that they can focus more on what the lecturer is saying.

The problems associated with the notes provided by the lecturer as handouts are mainly focused on the problems of reducing the attendance of lectures by students and the use of external teaching aids. The student’s ability to translate information into the audience and reproduce it in meaningful written notes is an important part of the learning process. Some researchers have shown that students who wrote down information during the lesson passed examinations better and stored information better than those who did not [5].

The opposing viewpoint to providing limited handouts is that lecture note-taking is cognitively demanding and students may have difficulty recording all vital information points and/or may record them inaccurately. This may be a reflection of student note-taking ability and/or teacher presentation of material, such as inaudible or fast-paced speech. The issue is one of cognitive load, in which student working memory may be insufficient at effectively listening to the lecture, processing the information, and then encoding it into a notes format, particularly if the pace is too fast or the material is too complex [6].

For instructional decisions regarding handouts, instructors must balance the value of students transcribing their own notes with the inherent limitations of cognitive load. One strategy is to provide students with only an outline of the lecture material as opposed to the entire set of instructor slides and/or notes. In this format, students are provided cognitive scaffolding from which they can engage in the process of listening and distill only the details. Moreover, students provided with outlines of notes outperform students taking notes on their own [7].

Handout is defined as printed material used to facilitate the explanation and assimilation of material.

The advantages of using this genre are obvious (exempting students from over-taking notes, providing important information that is not accessible to the general public, promoting better understanding and reinforcing material, increasing student attention and motivation). It should be noted that this genre functions as an integral component of the American academic discourse, namely the American academic lecture, where it is used in the following varieties:

- curriculum (syllabus). This type of handout is always given out by teachers in the first lecture, which is mainly introductory. The components of such a handout may include such items as information about the teacher, his coordinates; course information as outlined; literature; requirements for attending lectures, seminars; criteria for evaluating work;

- handout containing test. As a rule, students starting to learn a course should decide whether it suits them. For this, the teacher can offer to pass a test (diagnostic test), which shows the level of knowledge of the student;

- handout containing the current test (problem tests);

- handout containing answers to the current test (answer sheets/problem set solutions). Since the student must come to classes prepared by the teachers for these purposes, the problem tests are made, the student must work through them before he is sent electronically the answers to these tests (answer sheets/problem set solutions);

- handout containing citations (excerpts from texts). This type of handout is commonly used in lectures on literature, in which the teacher's monologue speech consists mainly of citations;

- handout containing recommendations for preparing for the test and a list of competencies that a student should have (prep sheet);

- handouts containing tasks that are solved in the lesson (worksheets);

- handout containing specific terminology, dates.

Thus, the handout genre is represented by various types that facilitate learning, coordinate organizational work and can be obligatory for each course of lectures (for example, a curriculum), or arbitrarily selected depending on the discipline and goals of the teacher.

Another consideration is how an approach to handouts affects student note-taking, attention and, ultimately, learning retention. This instructional consideration often is unintentionally ignored. Anecdotally, some instructors comment that students do not pay attention in class and resort to memorizing copies of the PowerPoint slides. Conversely, if instructors do not provide handouts, students then complain about the lack of handouts and spend the entire class transcribing everything. In each of these cases, instructor decisions may strongly influence respective student actions. Variables such as teaching methods, assessment methods, instructor persona, and student culture contribute to these student behaviors, but a broad-based discussion of these is beyond the scope of this paper.

If handouts are the lone variable, however, one consideration consistent with research is to furnish "skeletal" notes/outlines. This type of handout provides students with a cognitive scaffolding, alleviating the need to transcribe everything, yet still forcing them to pay attention and engage in the process of note-taking. An additional consideration, referring back to our need for research on digital note-taking tools, is to provide notes in a format conducive to student manipulation on digital devices.

The handout format types most likely used by faculty members (eg, PowerPoint slides, Microsoft Word documents, and pdf formats) all have different advantages and limitations, which may indirectly contribute to different note-taking styles and

methods. The style, breadth, depth, and visual layout of student notes may vary depending on whether students use paper, laptops, or tablets. This is one of the reasons new research is essential, particularly in light of recent findings regarding cognitive differences between typing and handwriting [8].

Finally, as digital environments increasingly affect higher education, we should consider the evolving interplay between note-taking, information management, and lifelong learning. The first decades of the digital age has introduced society to a variety of paradigm shifts including how we view the concepts of information storage and retrieval. Educators may need to rethink what it means to take notes and how those notes carry forward into future careers.

In a paper-based society, it was challenging, but not impossible, for students to carry all their notes with them. In addition, this made it potentially more challenging to sort through notes to review a particular concept. Now, not only can learning materials be stored on a phone or tablet, but students can find a phrase or concept in seconds. Cognitive and conceptual links can be made within and across courses. Admittedly, this is a drastic shift in thinking, but new ways of teaching (eg, flipped classrooms), new focal points for learning (eg, personal lifelong learning), and new ways of storing and accessing information (eg, mobile computing devices and apps) provide a foundation from which we can explore different models for note-taking and handouts.

Although handouts are a seemingly minor point in the teaching process, we must still take an evidence-based approach to guide teaching and learning practices in this regard. While neither faculty members nor students appear to prefer one format over another, the best handouts allow ample space for students to reformat information into their own words and may even be somewhat “sparse” to encourage active listening and note-taking. Yet, the purpose of and types of note-taking may be evolving. Note-taking should not become an art lost to the ages of recorded class lectures and pre-filled handouts. Without the valuable skills of listening and recording, students might fail to become “competent practitioners (who are able to) listen, read, organize, integrate, and utilize information in the care of their patients”

[9]. Students should use the note-taking medium that best engages their willingness and ability to learn [10]. Learners must discover the delicate balance of practical use, ease, and efficacy for their note-taking strategies. In this technology-literate society and rapidly-changing learning environments, faculty members need to guide students toward managing their current and future learning needs.

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