

Impact of Holding Power in the Classroom

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Abstract

Holding power is what is known in education circles as attention span. When the literature purposes student's attention span from none to 30 seconds, how does a teacher increase holding power in a student? In today's on-line learning environment, teachers are going up against activities such as K-12 video watching/game playing sophisticates, commercial time lengths, and texting.

The article discusses the aspects of holding power, along with the distractions student's experience in developing and sustaining holding power. Listening, as a holding power skill, is too often overlooked.

Descriptors: Online assessment, content, design, equipment, feedback, games, instructional design, methods, students, teacher, teacher support, and teaching purposes

Introduction

From the moment we are born someone is trying to get our attention. But even from birth, attention is a fluctuating, complex cognitive function. Being able to concentrate and pay attention is essential for human behavior. It is not a continuously sustained selection process and can either consciously or unconsciously be disrupted (1). Attention has to do with the immediate experience of the individual; it is a state of current awareness of external stimuli or internal events which must be maintained at a certain level of awareness (Horne, 2020; 1).

A student's lack of attention can lead to problems with concentration and self-control from having the motivation to learn to math, science, and establishing social relationships (2). While parents must find ways to gain their children's attention, teachers need to find new ways to utilize technology to achieve active learning, collaborative projects and experiential learning that will enhance traditional lecture and demonstrations of direct instruction, whether these lectures be face to face or virtual (3).

Both parents and teachers must consider mental and actual age as a determining factor in holding power. The attention span of a child will get longer with age and maturity. A student's attention span should increase up to 5 minutes for each year of the student's age while others suggest a reasonable attention span to be two to three minutes per year of their age (1, 2, 4). Kids Growth found the attention span of a child or teen who is actively trying to pay attention is 3 to 5 minutes for every year of the child's age (5, 6).

These numbers are subject to change based on determining factors like how many distractions are nearby, how hungry or tired the child is and how interested they are in the activity (4). When reaching adulthood, the average attention span is about 20 minutes (7).

It should be understood that there are any number of tables and charts providing examples of holding power. The authors selected the following statistics regarding average attention spans as additional examples of holding power.

Table 1: Average attention spans on content work

- 2 years old: four to six minutes
- 4 years old: eight to 12 minutes
- 6 years old: 12 to 18 minutes
- 8 years old: 16 to 24 minutes
- 10 years old: 20 to 30 minutes
- 12 years old: 24 to 36 minutes
- 14 years old: 28 to 42 minutes
- 16 years old: 32 to 48 minutes (4)

Table 2: Average Attention of a Product Video

10 seconds or less:	89.61%
20 seconds or less:	80.41%
30 seconds or less:	66.16%
60 seconds or less:	46.44%
2 minutes or less:	23.71%
3 minutes or less:	16.62%
5 minutes or less:	9.42% (Gaille, 2017).

Table 3: Internet Browsing Statistics

Percent of page views that last less than 4 seconds:	17 %
Percent of page views that lasted more than 10 minutes:	4 %
Percent of words read on web pages with 111 words or less:	49 %
Percent of words read on an average (593 words) web page:	28 %
Users spend only 4.4 seconds more for each additional 100 words	
Attention spans have shrunk by 50% over the past decade	
Two common causes of lost attention span include stress (18%) and decision overload (17%) (Gaille, 2017).	

Table 4: Impact of lost attention span

1. Percentage of teens who forget major details: 25%
2. Percentage of people who forget their own birthday: 7%
3. Average number of times per hour an office worker checks their email: 30
4. Average length watched for a single internet video: 2.7 minutes (Gaille, 2017).

Table 5: Attention Span Stats That Will Surprise You

1. 25% of teens forget major details of relatives and close friends
2. 7% people forget their own birthdays from time to time
3. 17% of page views last less than 14 seconds
4. Only 4% of page views last more than 10 minutes
- 5 Only 28% of words are read by users on an average 593 words web page (Statistic Brain Research Institute; 8).

Content focus

A common thread across this work is that pedagogical knowledge is neither discrete nor conceptually separable from the knowledge of the mathematics content being taught. Knowledge of how to teach a particular slice of mathematics rests on one's knowledge of the mathematics in question; however, research that has investigated the development of mathematical knowledge for teaching has shown this process to be less additive (e.g., learn the content, then learn to teach it) and more iterative (Steele, & Hillen, 2012).

The question "how long is the average human attention span?" remains. Being attentive is more challenging for some people than others. Overall, the average person can pay attention for only a mere eight seconds according to one study that focused on 3 types of attention: sustained, selective and alternating (Lake, 2016).

Performance, and largely productivity, are determined by the ability to give full attention to one thing at any moment. Everybody can do it and, indeed, we all do it unconsciously when we are totally committed to what we are doing or when our brain accepts, without any doubt, that the thing at hand is a top priority issue. (Sáez, n.d.).

When, in a proactive way, the student is doing something with which they feel very identified, they are able to stay completely focused on it. When, in a reactive way, they face a crisis, it is exactly the same. In these situations there is only one thing that captures all their attention, and nothing can distract them or create a conflict of priorities in their mind. When they are in the zone, the only matter is what is happening here and now. (Sáez, n.d.).

Definitions

Attention

As we read several terms will become prominent. Key among them is the term attention. There are various types of attention. Each type is necessary for learning, safety, social skills, and function. The literature basically recognizes four kinds of attention using different types of labels.

Focused/Sustained/Intentional – People exhibiting intentional attention already know what they are doing and what they actually want to do. They plan strategically and note down the pros and cons of their decision and prioritize their activities accordingly. This type of attention where people concentrate focus on a single task for a long period of time and everything else is considered as less important. This type of attention allows people to stay focused and motivated to continue a single task working toward long-term goals until completed (Barkley, 1997; Schwartz, 2013; 9, 10; 11; 12).

Selective/Responsive

This type of attention allows the focus attention on a single task even when there are different situations to be faced. There is no plan beforehand. Response is according to the situation. Attention is placed among many different choices and the student has to stay on that task (Barkley, 1997; Schwartz, 2013; 9, 10; 11; 12).

Divided/Alternating

Divided/Alternating attention helps retain information while successfully completing two or more tasks at the same time when attention is needed in multiple places. This type of attention requires a mind to be flexible, quick to understand, translate and switch information to complete an immediate task without forgetting the plans for the next project (Barkley, 1997; Schwartz, 2013; 9; 10; 11; 12).

Unproductive//Interrupted

This type of attention has people exhibiting interrupted attention are unproductive and get easily distracted. Productivity is secondary with thoughts wandering with no priority set to balance their lives (Barkley, 1997; Schwartz, 2013; 9; 10; 11; 12).

Attention is the key to achieve optimum functionality in our lives. The ability to focus on relevant environmental stimulus is called attention. When it comes to studying or learning, attention is the process or act of concentrating on one or more environmental factors that the five senses experience to the exclusion of other stimuli (Bhasin, 2018; Cole, 2020; 13; 14).

Attention has to do with the immediate experience of the individual; it is a state of current awareness. There are events taking place in the world impinging upon a person's senses along with events taking place within the body that affect attention (Horne, 2020).

The only organ used in the process of attention is the brain. The brain dual processes information either as automatic or controlled attention. In automatic processing cognition is automatic given a specific stimulus, little effort, and doesn't interfere with other mental processes. Controlled processing relies mainly on serial processing and is responsible for self-regulation and is cognitively expensive (Bhasin, 2018; Hale, 2012).

However, this article is about the attention needed to develop sustained attention. This is lasting, prolonged maintained length without interruption or weakening attention (9). The key point for teachers, principals and parents to realize is that maintaining attention is a skill. It must be trained, and it must be practiced. The following are definitions of key aspects of attention.

Subject/Subject Area/Content

Among educators today subject or subject area is referred to as content area to a defined domain of knowledge and skill in an academic program. Content areas are one method that schools use to organize knowledge, teaching, and academic programming. The term content-based instruction is commonly used to describe approaches to integrating language and content instruction. Content areas in public schools are English (or English language arts), mathematics, science, and social studies (or history and civics) or combinations such as humanities (a blend of English and social studies), the fine/performing arts (a blend of visual art, dance, music, and theater), and science, technology, engineering, and math [STEM] (Met, 1999; 15; 16; 17; 18).

Coherence

Coherence in education is something logical or consistent and something that makes sense as a whole. Coherence describes the way anything "hangs/sticks together." Coherence makes a logical unified and meaningful bridge between parts fitting them together so they are all heading in the same direction to form a united whole. While a completely subjective judgement coherence is an extremely important quality of teaching. Without coherence a discussion may not make sense or may be difficult for the audience to follow (19-25; 5; 26-28).

Focus

Focus centers/directs/emphasizes attention or effort on the main purpose or interest of the subject that is being discussed. Focus is related to coherence because coherence problems emerge when the focus is too broad. When the focus is broad, there are just too many parts to cover all at once. Children struggle to maintain coherence without focus (21; 29; 30).

Concentration

Concentration refers to the mental effort directed toward whatever the student is working on/learning at the moment. It's sometimes confused with attention span, but attention span refers to the length of time the student can concentrate on something (Raypole, 2019).

Participation

Participation is equated with discussion. Participation may involve a lengthy conversation with the whole class or short exchanges between instructors and students, or within small groups of students (31, 32, 33).

Empowerment

Empowerment in education focuses on the interactive process of participation and collaboration of individuals within an organizing structure to focus their efforts on an identified outcome or common goal. Students acquire in some general way the handing over of decision-making in the educational relationship (Deacon & Parker, 1995 as cited in Lawson, 2011; O'Byrne, 2018; 34; 35).

Motivation

Motivation is a key to holding power. Motivation is defined as the process that initiates, guides, maintains, and directs behavior toward particular goals and leads to increased effort and energy. Motivation influences what and how information is processed. It increases the initiation and persistence of activities and enhances cognitive processing.

Motivation can be internal (intrinsic) or external (**extrinsic**) forces that give students power to learn effectively. Student motivation, which underlies the whole learning process, can be affected by the design of the activity because motivated students are more likely to pay attention and try to understand the material (Souders, 2021; Cherry, 2020; 36; 37).

Teachers are the best source of motivation in the teaching-learning interaction which in turn triggers student attention because they design the instruction. Their creation must be an open and positive atmosphere in class by designing learning activities that are challenging, relevant, and linked to student's future success. This design incorporates factors to bring focus and coherence in the design of learning activities: curiosity, control, competition, cooperation, and recognition (Souders, 2021; 36; 37).

An enthusiastic instructor who has good rapport with students and providing frequent feedback to students completes the equation for holding power.

Limiting Distractions

A large part of the role of a teacher comes in 2 aspects. The first, which if forthcoming, is to limit distractions. The second aspect is to train and practice the student's skill of attention.

Students spend every waking hour attending to one thing or another. While students may believe they have unlimited processing capacity it is not true and therefore students face a competition for attention. Some individuals are more easily distracted than others, but for everyone, distractibility varies with circumstances. A person's age, physical, mental, social, and emotional development leads to their attention span generally increasing. This is where teachers come into play.

Distractions can break a student's attention and make it difficult to complete the task in a timely or effective fashion. These distractions include environmental as well as cognitive disruptions (McMahon, 2020).

The information age has brought a change to our general attention span by providing too much information. One only needs to look at what's in a person's hand to see the wide arena that encompasses web searches, movies, books, social media, and smartphones. Social media includes but is not limited to Facebook, Twitter, Instagram, and YouTube. Due this information at our fingertips we focus on things for very short bursts of time due to the limitless prompts and streams of notifications on the web (3; 36).

A person's learning style and the interest in a certain activity can also determine the length of attention span. Some factors are:

- A person's special needs
- Environment
- Lighting
- Noise level
- Multitasking
- Time of day
- Temperature (7; 8; 38).

Limiting Distractions

The biggest obstacle to doing well in school is distractions (Wong, 2020; Linsin, 2014). If the student has a tough time focusing, a good strategy for success is to turn off all distractions. Most distractions are noise. This means no TV, radio, music, movies, cell/smartphone, calling friends, and internet. The easy and most difficult way to avoid distractions is to isolate the student from them. However, some ways to eliminate distractions before they become distractions:

1. Turn off notifications on the phone/tablet
2. Delete all the apps that are distracting
3. Put your phone/tablet in another room before starting work
4. Set a long password to unlock phones/tablets
5. Restrict Internet access
6. Have only one tab open in your browser at a time
7. Schedule a specified time for schoolwork
8. Isolate the student in a designated study area (Wong, 2020, 39; 40).

Exceptions to these hints are homework assignments involving computer usage or calling a classmate about an assignment and headphones used properly either as an accommodation or to isolate are exceptions to noise distraction (41-43).

Conclusion

To summarize, attention has become an asset today and limiting distractions will enable focusing on the task at hand. Positively avoid social media. Becoming absorbed in studies improves learning (Cromwell, 1998; 6; 8; 12; 28; 36; 38; 39).

Research has shown that individuals who can **sustain their attention** for extended periods of time perform better on all sorts of cognitive challenges than those who cannot (McKay, & McKay, 2020). Attention is a skill. A skill needs practice and developing the “sustained attention muscle” should be a central part of education (Schwartz, 2013).

Parents, teachers, principals, if you take nothing else from this article realize that *maintaining attention is a skill. It must be trained, and it must be practiced.*

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