



# Pioneering Innovative Pedagogy through Adaptive Teaching and Stealth Assessment

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**Abstract:** Pedagogy signifies the way of teaching individuals, whether it may be theory or practice of educating. It is a relationship between the culture and techniques of learning. The main aim of pedagogy could be stated as to work on the development of skills and attitudes of the learners. Pedagogy is the art of teaching which has been arched in various directions to suit the learners' conventions. In the 21<sup>st</sup> century where every pedagogical process is being digitized and not methodical, is it really still innovative or rather effective. It would be innovative if the process of teaching could bend every time according to the listeners' distinctions, that is if it could adapt itself to the requirements of the students. So an effective solution to that would be adaptive teaching and stealth assessment system through which the teachers will adapt themselves, be it digital or non-digital, according to the students' needs to provide a suitable environment for learning and implementation of the acquired knowledge. Also a cumulative stealth assessment of the learners' performances would provide a more accurate knowledge of the type of adaptation to be utilized to make learning more engrossing, associating and compelling.

**Keywords:** Pedagogy; students; adaptive teaching; stealth assessment; environment; technology; digital; learner.

## I. INTRODUCTION

Adaptive learning systems endeavor to transform the learner from passive receptor of information to collaborator in the educational process. Adaptive learning or intelligent tutoring has its origins in the artificial-intelligence movement and began gaining popularity in the 1970s. It is an educational method which uses digitized algorithms as well as artificial intelligence to orchestrate the interaction with the student and deliver customized resources and learning activities to address the unique needs of each learner but the first teaching machine actually dates back to 1924, when Ohio State University professor Sidney Pressey built the Automatic Teacher. The first device in electronic learning, it allowed students to drill and test themselves. This could also be done physically or non-digitally by the instructor.

## II. A CHRONOLOGY OF DEVELOPMENTS IN THE FIELD OF ADAPTIVE TEACHING

- **1956-** Gordon Pask and Robin McKinnon-Wood develop SAKI, the primary adaptive training gadget to enter business production. SAKI taught keyboard competencies and it optimized the charge through which a trainee keyboard operator discovered by means of making the issue level of the obligations contingent on the learner's performance. Because the learner's performance progressed the charge of coaching expanded and instructional help turned into behind schedule.
- **1992-** C. Thomas and M. Krogsaeter describe an adaptable extension to Microsoft Excel known as Flexcel. Flexcel records and research the person's command history using Excel and "analyzes the user's interplay fashion and offers variation tips." (p. 123) as an instance, this system notes whilst a person repeatedly fails to make use of an to be had shortcut and reminds the consumer approximately the possibilities of the shortcut.
- **1996-** S. Bhavnani and colleagues describe an Active Assistant for Computer-Aided Design (CAD) programs, for which they constructed a prototype version. The Active Assistant records the history of a CAD user's usage of the program, and monitors for "symptoms of suboptimal and incorrect CAD usage" (p. 253). Upon discovering such cases, it might provide "textual notification that there is a better way to perform a task executed by the user" (p. 251) or it might provide "graphic remediation" utilizing a tutorial window.
- **1996-** Microsoft introduces the office Assistant—regularly called "Clippy"—to offer personalized help within the use of workplace ninety seven merchandise. Relying upon person-set options governing Clippy's conduct, the lively agent can provide a ramification of types of advice to customers, primarily based on inspection of the consumer history and contrast with surest prototypes. Clippy turns into extraordinarily infamous amongst a few office customers, who whinge that the agent is intrusive



and annoying.

- **1996-** Oppermann & Thomas describe an approach for Supporting Learning as an Iterative Process where users of an application to be learned can acquire usage knowledge iteratively by experience, annotations and individual or cooperative recourses to prior knowledge.
- **1999-** F. Linton describes the OWL (Organization Wide Learning) undertaken on the MITRE business enterprise in Massachusetts, u.S.. In OWL, all the pc customers inside an employer run software program that keeps song of the Microsoft office commands they issue. With the aid of pooling and evaluating the command histories of different customers, OWL can "advice to each person man or woman decided on phrase features that their friends have already located useful." (p. 2). The prototype of OWL became constructed the use of visible fundamental and statistics all workplace instructions given via the consumer, along with with the mouse.
- **2001-** Oppermann & Specht describes a Context-sensitive Nomadic Information System that supports learning by adaptive information about museum exhibits while roaming through a museum.
- **2001-** Microsoft demotes the Office Assistant to a subordinate, non-default status within the Office XP applications
- **2006-** Fujitsu organisation files a US patent utility (#20070092857) on a "method and equipment for helping education, and pc product." The application claims that Fujitsu invented the concept of "An equipment for helping training for the use of an application application, comprising: an reading unit configured to investigate a report of usage of capabilities inside the utility software primarily based on an operation history of the application application; and a generating unit configured to generate records regarding the education based on a result of analysis via the studying unit."

### III. THE ESTABLISHMENT OF STEALTH ASSESSMENT

According to Retro Gamer's John Szczepaniak, the first stealth game was Manbiki Shounen (Shoplifting Boy), published in November 1979. The PET 2001 personal computer game evolved through Hiroshi Suzuki and includes a boy coming into a convenience store and attempting to shoplift by stealing "\$" symbols at the same time as averting the road-of-sight detection of the owner. If stuck, the participant is led away via the police. Suzuki supplied the game to developer Taito, which used it as suggestion for their similar stealth arcade sport, Lupin III (based at the manga and anime of the identical call), launched in April 1980. In November 1980, Suzuki advanced a sequel, Manbiki Shoujo (Shoplifting woman).

Citadel Wolfenstein, at the beginning available in 1981, employed stealth elements as a focal point of the gameplay. Gamers had been charged with traversing the tiers of fortress Wolfenstein, stealing secret plans and escaping. Gamers could accumulate uniforms to conceal themselves and walk with the aid of guards undetected. Past fortress Wolfenstein, released in 1984, covered a few additions to its predecessor, along with a dagger for near-variety kills and a greater emphasis on disguising in enemy uniform. The software program's updated 1992 remake Wolfenstein 3D become originally going to feature some of the authentic's stealth gameplay, which includes body hiding, however this was reduce to make the sport faster paced. Because of those changes, Wolfenstein would rather pave the manner for later 3-d motion games, specifically first-individual shooters.

In 1981, Sega released an arcade recreation called half in which the participant's project is to take a briefcase of mystery files to a ready helicopter at the same time as keeping off enemy flashlights and use containers as hiding spots. It holds the Guinness international report for being the first stealth recreation. In 1985, Durell software launched Saboteur, a sport wherein the player controls a ninja who has to infiltrate a facility and find a disk whilst heading off or defeating protection cameras, guards, and puppies. Retro Gamer has known as this "the original stealth game" Mindscape's Infiltrator, launched in 1986, mixed a flight simulator with a stealth-based "floor project". In this ground challenge, the protagonist attempts to sneak into enemy territory the usage of fake IDs to keep away from detection and knock-out gas to incapacitate enemies. The purpose of this venture is to image mystery documents even as avoiding alarms.

Hideo Kojima's metal equipment, launched in 1987 for the MSX2 and the Nintendo enjoyment gadget in 1988, applied stealth factors within a movement-adventure framework, and changed into the primary mainstream stealth game to be released on consoles. Because the MSX2 changed into no longer to be had in North the us, handiest the NES version changed into launched there. Steel equipment positioned an extra emphasis on stealth than other video games of its time, with the participant man or woman stable Snake starting without any guns (requiring him to avoid war of words until guns are observed) and having restrained ammunition for each weapon. Enemies are capable of see Snake from a distance (using a line-of-sight mechanic) and listen gunshots from non-silenced weapons; safety cameras and sensors are placed at numerous places, and a security alarm sounds each time Snake is spotted and reasons all enemies on display screen to chase him. Snake could also cover himself in enemy uniform or a cardboard field, and use his fists to fight enemies. In 1988, Infogrames posted Hostages, every now and then called Rescue: The Embassy project. Certainly one of the sport's 3 fundamental segments required gamers to prevent searchlights by using rolling and ducking into doors. Gamestop has located that the sport "set critical grounds and ideas for destiny stealth/tactical shooters," noting the game's use of deadlines, cover mechanics, and checks of reflexes.



The sequel metal gear 2: stable Snake became launched in 1990 for the MSX2. It in addition advanced the stealth gameplay of its predecessor and brought most of the gameplay factors present in metallic tools stable, inclusive of the 3-dimensional detail of peak, allowing gamers to crouch and crawl into hiding spots and air ducts and under desks. The player could also distract guards via knocking on surfaces and use a radar to plot ahead. The enemies had stepped forward AI, including a forty five-diploma discipline of vision, turning their heads left and right to peer diagonally, the detection of diverse extraordinary noises, being able to flow from screen to display screen (they have been limited to a single display screen in earlier video games), and a three-phase protection alarm (wherein reinforcements are referred to as in to chase the intruder, then stay in search of sometime after dropping sight of the intruder, and then depart the location). The sport additionally had a complex storyline and progressed pix.

### Merits of stealth assessment

Stealth assessment is a method of performance based assessment that, which is not a direct examination system (neither written nor vocal), could be implied by engaging learners in engrossing activities like educational games or videos and asking assessing questions using it, this could provide a detailed information on the progress, understanding and critical thinking of the students. If we were to go by historical sources, then exam assessment system was introduced by an American businessman and philanthropist known as Henry Fischel somewhere in the late 19th century. However, some sources signify the invention of standardized assessments to another man by the same name. Later it was modified and branched into various methods such as stealth assessment. Using adaptive teaching and stealth assessment at the same time for teaching the students could prove to be a revolutionary development in pedagogy history.

## IV. ADAPTIVE LEARNING SYSTEMS

Adaptive learning systems have traditionally been divided into separate components or 'models'. Most they have the models with these names or they are tweaked a little bit as follows-

- i) Expert model – The model with the information which is to be tutored;
- ii) Student or pupil model – The model which tracks and learns about the student;
- iii) Instructional model – The model which actually conveys the information;
- iv) Instructional environment – The user interface for interacting with the system

### Why should we implement adaptive learning along with stealth assessment?

There are various ways to implement this pedagogical method as is significant from its given name. The word adapt means to make it suitable through alteration which means the system will adapt to the situation concerning the particular individual to make them understand a certain topic more profoundly. Overlapping adaptive teaching process along with the stealth assessment method could prove to be an intensively progressive method for the development of pedagogical methods throughout the world as the adaptive teaching will keep the students learning along with increasing their capacity to understand, to think, to reason and to concentrate while the stealth assessment process will accumulate data on regular basis without informing the learner to keep an update so that the method of teaching could be changed to better adapt the learner.

### Examples to increase transparency of the methods of teaching

So to make the method more transparent let's consider an example: the most relatable example would be the pandemic situation, during which our whole education system was digitized, I would like to know how many students gained actual knowledge during this period. I assume it was below 10%. The problem was not with the digitization, apart from the technical issues that were intentionally or non-intentionally created, rather the problem was the environment in which we were learning.

Another example would be if we were to teach a deaf and dumb person the teacher would require the knowledge of sign language or the use of kanji Chinese pictograms which are vivid examples of adaptive teaching along with the cumulative analysis of the students performances on each particular day will voice out the better method of teaching. Also assessing the student only once will leave the assessment incomplete so the evaluation tests needs to be done on a regular basis for a clearer result. The environment of the student decides how much knowledge could he soak up, this could be compared with situation such as if a person who prefers rainy or cloudy days over sunny days was made to walk 1km on a sunny day would feel more worn out than if he were to walk on a windy or cloudy day, maybe he could even walk an extra mile on a windy day as he prefers such weather.

## V. CONCLUSION

Adaptive teaching helps in finding a more suitable method for imparting knowledge while stealth assessment using games or other methods could realize the strengths and weaknesses of the individual without informing them which keeps the evaluation more true and error-free as the students will not feel any anxiety that they feel during normal examinations.



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