

# Institutionalized Resistance To Asynchronous Learning Networks

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## **ABSTRACT**

Most of the literature on Asynchronous Learning Networks (ALNs) has focused on the pedagogical and technological advantages of this educational delivery mode and the way ALNs can respond to the changing demands and pressures placed on institutions of higher education. However, there are considerable obstacles preventing the widespread implementation of ALNs. These obstacles, and the associated forms of opposition and resistance, must be analyzed in an organizational context that examines the prevailing academic culture and the widely institutionalized value placed on classroom-based teaching and learning. The recognition of the classroom as a sacred institution in higher education, and a major source of professorial identity, is a necessary first step toward developing strategies for organizational change and pedagogical transformation.

## **KEYWORDS**

ALN  
Instructional Technology  
On-Line Course  
Organizational Change  
Academic Culture

## **I. INTRODUCTION**

Much of the current literature on organizational change in higher education is driven by the perception that the academy is presently facing an unprecedented range of external pressures that include changing student demographics, fiscal constraints, emerging informational and instructional technologies, new skill demands from private sector employers, and new conceptions of teaching and learning. New and emerging information and instructional technologies represent one of the most significant institutional challenges facing higher education. Advocates of instructional technology have argued that changing social and economic conditions demand new educational delivery modes and the application and incorporation of these technologies [1],[2],[3].

Organization theories that conceptualize organizations as rational or adaptive entities would expect higher education to respond and develop internal means and structures to adapt to and meet the demands of this rapidly changing environment [4],[5]. The model of a learning organization would also expect higher education to develop and deploy the capacity for continual

assessment, reflection, self-transformation and quality improvement [6]. In reality, however, institutions of higher education have failed to conform to either of these organizational models. Instead we often find inertia, defense of the status quo, denial, and opposition and resistance to change. In order to understand this organizational reality one must look beyond rational and biological models of organization and consider the sociological and human institutional forces that constrain and shape the direction of organizational change.

This paper will present a conceptual model for understanding organizational resistance and apply this model to the case of a particular instructional technology -- Asynchronous Learning Networks (ALNs). ALNs are defined here as distributed learning environments that are "virtual classrooms" [2] involving asynchronous interaction and the exchange of information *exclusively on-line* with no face-to-face interaction or conventional physical classroom arrangements. It is assumed that institutions of higher education will eventually embrace these new forms of instructional technology as the pedagogical and or productivity advantages become apparent.

This paper will address some of the problems with this optimistic scenario for change and consider some of the institutional and cultural sources of resistance and opposition. It is also important to distinguish among the various forms of instructional technology. ALNs represent one of the most radical applications of instructional technology that supplants a historically valued institutionalized practice -- classroom teaching. Much of the skepticism about and opposition to ALNs are based on the historical attachment to the physical classroom environment.

The raw material for this paper is based on my experiences teaching ALN courses, managing an ALN program, presenting the ALN model to faculty and administrators, and discussing this delivery mode with a wide range of faculty members. The paper presents a theoretical framework that can be used to understand some of the institutional, organizational, and cultural challenges facing efforts to introduce alternative teaching and learning models. The empirical validity and general applicability of this framework will ultimately require more systematic forms of data collection and observation. However, I believe the framework can provide some insights on the institutional sources of resistance and, in turn, assist in the development of strategies for organizational change.

## II. THE OPTIMISTIC SCENARIO

The optimistic scenario that predicts the rational application of instructional technologies rests upon two basic assumptions. The first is that organizations will adopt alternative practices and techniques if they can be shown to enhance organizational productivity. There are those who believe that instructional technologies, from video transmission to ALN's, will solve many of the productivity problems currently facing higher education. As Green and Gilbert note, "the stated hope is that computing and information technologies will yield new levels of institutional and instructional 'productivity.' The stated expectation is that the infusion or integration of new technologies into instruction will, at minimum maintain and ideally enhance student learning while significantly reducing instructional costs," [7].

It is important to consider the time frame for evaluating the productivity impact of new technologies on both the customer-oriented aspects of higher education as well as the instructional side. Implementation cycles may extend over several years and in the early stages, marked by small projects, experimentation, and large infrastructural start-up costs, the measurable productivity gains may be small or non-existent [5]. But over time, according to the implementation cycle research, as we move toward the latter stages, the organization itself will

be slowly transformed, and the information technology, rather than being constantly evaluated and scrutinized, will simply be taken for granted as an integral part of the organizational operation. What this could mean for ALNs is that eventually all the major infrastructural investments will have been made, an expanding core of faculty will be offering ALN courses as a regular part of their teaching loads, and technological competence levels will be diffused throughout the organization.

Because ALNs are directed toward the teaching and learning process, some observers have even argued for a different definition of productivity. Heterick argues that "We must find our way out of the tar pit of justifying technology applications because they demonstrate tangible cost savings and into the integration of technology because it significantly improves the learning process.[8]" Likewise, Green and Gilbert contend that if productivity were measured at the level of the individual learner (not the standard administration unit of analysis), "the 'productivity gains' for individual students would produce impressive numbers" and they conclude their report with the admonition that "content, curriculum, and communication -- rather than productivity -- are the appropriate focus of and rationale for campus investments in it,"[7].

Coupled with the belief about the transformative impact of productivity enhancing technologies is the second assumption that external forces and competitive pressures will prompt organizations to restructure their internal operations in response to these changing environmental conditions. For example, Twigg argues that organizational change must occur given the changes in what students need to learn, how students learn, who the students are, when the students can learn, where the students can learn, and what students can access while they learn. More specifically, Twigg describes a "need to create new ways of delivering higher education that overcome the shortcomings of our current one-size-fits-all approach to teaching" [1].

### **III. THE REALITY OF HIGHER EDUCATION AS A SOCIAL INSTITUTION**

The arguments outlined above suggest a relatively optimistic scenario in which the substantial upfront costs of technological investment will eventually yield productivity dividends, and technology use will become an integral part of the day-to-day operation at all levels as the higher education responds to changing environmental demands. This analysis obscures the fact that institutions of higher education are social organizations characterized by traditions, cultures, norms, and institutional missions. Further, it is assumed that the major obstacles to organizational change and technology adoption reside in the realm of technological feasibility and cost-benefit analysis. In reality, organizational change is contingent on a set of social and human social factors and dynamics that are much more difficult to manage and manipulate. In academia, obstacles to change are closely associated with the established practices and cultural traditions of the teaching faculty.

Why focus on faculty? In order for institutions of higher education to undergo significant transformation, changes must be approved, accepted, and ultimately put into practice by the teaching faculty. Top down initiatives and administrative directives, assuming they can even be proposed without faculty consent, have little chance of being translated into action without faculty compliance. While the administration is "formally" in a supervisory and authoritative role, in actual practice the system of faculty governance, alongside a weak enforcement and discipline structure, render many administrative directives impotent. This "loosely coupled" organizational system is a major factor preventing rapid and comprehensive organizational

change [9]. Thus one can neither understand the obstacles to organizational change nor develop strategies for implementing change without a consideration and analysis of faculty practices and academic culture.

According to the accumulated surveys of faculty computer usage, there are wide variations in the levels of involvement, engagement and receptivity to information technology-based learning modes such as ALN's. However, those who are actually using new instructional technologies represent a relatively small percentage of the faculty population (most surveys report between 20 and 30%), [10].

Geoghegan [11] has applied Rogers' [12] diffusion of innovation model to the question of faculty involvement and participation with instructional technology. He divides the bell-shaped faculty distribution into five categories. At the left-hand tail of the distribution are the "innovators" who make up no more than three percent of the population. These tend to be the campus "techies" who are intrigued by new developments in hardware and software and are able to use the technology independent of any institutional assistance or support.

The second group, making up about 10% of the population, are the "early adopters," who are viewed as the "visionaries" combining an interest in and competence using technology with a desire to incorporate these new technologies into the teaching process. This group is also quite self-sufficient in the use and application of the technology.

The majority of the population, about 70%, can be divided into the "early majority" and the "late majority." The early majority are the pragmatists who are receptive to new technologies but are only willing to use them if they are proven and reliable means for improving teaching and learning. The late majority are the skeptics who are less receptive to new technologies and who must be convinced, and maybe even coerced, to actually employ the new technologies.

At the right-hand tail of the distribution one finds the "laggards" -- those who have absolutely no interest in using new instructional technologies and who may also launch the strongest opposition to any changes in educational delivery modes.

The widest "chasm" in the distribution from innovators to laggards, according to Geoghegan [11], borrowing from the work of Moore [13], is the transition from the early adopters to the early majority.

Passage from the visionary group (the early adopters) to the mainstream is where the most significant potential for failure lies...This gap is so significant in the case of instructional technology that it has so far stymied almost all efforts to bridge it...What is it about instructional technology as an innovation, or about the way it has been supported and "marketed" by its proponents, that has prevented its bridging the gap?

The gap that Geoghegan identifies represents the point where many colleges and universities currently find themselves. Since he believes the key to success requires bridging this gap he offers a number of suggestions for crossing the chasm. These include recognizing the existence of the gap, opening up the "technologists' alliance" (early adopters and instructional technology personnel) to facilitate the dissemination of information and provide peer support for the early majority, avoiding the alienation of the mainstream with unrealistic claims about the ability of technology to solve all pedagogical challenges, and, last, providing some compelling reasons why it is in the interest of faculty to buy into the new instructional technologies. He writes:

If the application is successful in accomplishing a noticeable improvement in some important area of teaching or student learning, and if it does so in a manner highly visible and attractive to the early adopter's mainstream peers, then it has a chance of being adopted into the mainstream population. This will not occur, however, until the costs of adoption (time, money, disruption to normal activity, etc.) are perceived by the mainstream to be significantly less than the positive value to be gained from adoption [11].

This diffusion model, like the rational and environmental organizational models, assumes a process of organizational transformation that does not devote sufficient attention to the deep-seated institutionalized sources of resistance to change and the particular difficulties in promoting ALN-style instructional technology.

A more complete analysis must distinguish ALNs from other instructional technologies and place colleges and universities in a larger organizational context. In considering ALNs, a distinction must be made between the adoption or use of a technology and the acceptance of the technology as a legitimate means of instruction. Geoghegan [11] is writing about instructional technology generally, and these technologies can include a wide range of practices and delivery modes. Because ALNs represent a very distinctive and radical application of instructional technology, the question with ALNs is not whether faculty will actually teach in this way but whether faculty will accept or actively oppose their introduction or implementation as part of the college curriculum and mission.

ALNs are not listserve groups, email systems, PowerPoint presentations, or PictureTel transmissions -- they are virtual classrooms that dematerialize the physical classroom setting. It is this feature of ALNs, I believe, that poses the greatest perceived threat and, accordingly, prompts the most negative reaction from faculty. Not only do the majority have no intention of utilizing this technology, they may also view it as an illegitimate learning mode. Given this scenario, it will be a much greater challenge to promote the adoption of ALN-style instructional technologies.

Contrary to the logic of Geoghegan's model, demonstrating that teaching and learning can be improved in an "attractive manner," or convincing faculty that the "costs are significantly less than the positive value," may be insufficient. For many faculty, teaching without a classroom is not viewed as an "attractive" alternative and it may be viewed as too heavy a cost, regardless of the other positive benefits. In short, ALN technology cannot be viewed as a neutral value-free means for improving teaching and learning. For many faculty it represents a radical departure from prevailing practice that is incongruous with their understanding of the essential nature of teaching and learning [14].

Among the theoretical models that can be employed to understand the opposition and resistance to ALNs by educational organizations, the "*institutionalist perspective*" provides a number of major insights. [1] Like many theoretical perspectives, the institutionalist model has developed in opposition to organization theories that assume the rational and functional adaptation of organizations to changing environmental pressures. As noted, much of the existing literature on new instructional technologies subscribes to this latter view in arguing that these alternative learning modes are ideally suited to changes in student demographics and lifestyles, definitions of learning, and workplace skill requirements [1]. Thus, there are a wide variety of environmental forces that suggest the transformation of organizational practices in higher education. However, educational institutions seem highly resistant to these increasingly powerful environmental

pressures [20]. Standard operating teaching and learning procedures remain intact for long periods of time; they appear impervious to external pressures; and they are often fiercely defended by organizational members. This pattern of organizational non-responsiveness fits squarely into the logic of institutionalist analysis. In the words of one of the early institutionalist theorists "perhaps the most significant aspect of institutionalization is infusion with value beyond the technical requirements of the task at hand. The test is expendability, that is, the readiness with which the organization or practice is given up or changed in response to new circumstances or demands,"[18].

According to more recent versions of institutionalist theory, known as the "new institutionalism" [15], organizations converge around institutionalized practices that prescribe the most appropriate and legitimate organizational forms and structures. These begin to take on the character of "rituals" [21]. These widely accepted patterns of organization become institutionalized and deeply embedded within the organizational culture. Under these conditions, organizations become highly resistant to external pressures for change. It is instructive to note that the institutionalist model has been most often applied to educational institutions.

In using an institutionalist model to address the question of ALNs and higher education, it is important to focus on the actual actors and interests that either support or resist environmental and technical change. It is my contention that ALNs, in contrast to other forms of instructional technology, will be opposed and resisted by a majority of the teaching faculty who value, are committed to, and have a vested interest in, conventional classroom teaching arrangements. Because ALNs propose the replacement of the physical with the virtual classroom, they pose a major challenge to one of the most cherished institutions in the academy.

Within educational organizations the classroom has taken on the status of a sacred institution. The classroom is a physical location, containing a fairly standardized set of props and objects that carry symbolic meaning. The classroom is also a social institution -- a value and norm-laden contextual milieu -- that assigns role obligations, expectations, and differential status to the human participants. When organizational practices like classroom teaching are deeply institutionalized, and combine both material and symbolic features, they are especially immune to transformation.

The classroom institution has historically centralized power and influence in the hands of the instructor. When faculty walk into the classroom the learning begins; faculty are the source of knowledge; faculty communicate information and influence the students; faculty determine what will be taught, who will speak and when; faculty determine the correct or incorrect answer; and faculty determine when it is time for students to "stop learning" and leave the classroom. ALNs, in contrast, shift a considerable amount of power, authority, and control from the faculty to the students. Thus many faculty may have a vested interest in preserving and defending the classroom institution.

The neo-institutionalist model examines the manner in which organizational practices and procedures are defended. Highly valued organizational practices take on the status of "**rationalized myths**" [16]. They are "rationalized" in the sense that a particular organizational practice, in this case classroom instruction, is regarded as the single best and necessary means for assuring a desired outcome. However, such institutionalized organizational practices are also "myths" because arguments for their effectiveness rest less on empirical verification or assessment than on deep-seated consensual beliefs and long-standing tradition [22]. The teacher-centered classroom tradition has become the widely accepted standard for evaluating the appropriateness and legitimacy of educational practices. "Such elements of formal structures are

manifestations of powerful institutional rules which function as highly rationalized myths that are binding on particular organizations” [15].

In defining the attachment to the classroom as an institutionalized practice and rationalized myth, the institutionalist perspective provides a framework for explaining why organizational members will assign value, and resist changes and threats, to established routines. On the other hand, not all organizational practices and routines are highly valued nor do they necessarily elicit a strong emotional reaction when threatened, nor are organizational members always unwilling to adopt alternative methods. Many long-standing practices are discarded when practical alternatives are offered. Thus, one problem with the institutionalist perspective is its failure to provide a basis for explaining the variation in the intensity of opposition and resistance. There is another sociological concept, however, that can shed some light on this question.

In an interview on organizational change, Margaret Wheatley, a writer and commentator on organizations and leadership, defined organizational resistance as “people’s assertion of their identity as they presently construct it” [23,p. 50]. Wheatley’s definition directs us to the role of identity as a critical factor galvanizing opposition to organizational change. Combining the institutionalist model with Wheatley’s insight on identity suggests the following hypothesis: **the greater the degree to which a particular organizational practice defines and reinforces one’s core professional identity, the greater will be the opposition and resistance to alternative practices and routines.**

The intensity of one’s attachment to a particular organizational practice can be better understood when it is linked to one’s organizational or professional identity. When identity is defined and reinforced through particular forms of social action -- the view that people “become by acting” [24] -- then proposals that advocate alternative actions will be met with significant resistance. More specifically, the faculty identity as a professor, as an expert, as a source of knowledge and information, is heavily shaped and reinforced through the role of classroom instructor and the face-to-face interactions that make up the classroom teaching arrangements. The students in the classroom represent a mirror that shapes the “looking-glass self” and the professorial identity.

ALNs entail a different process of identity enhancement. Even if one is willing to entertain an alternative to the teacher-centered classroom model, the computer screen may be viewed as a totally unacceptable alternative for those who shape their identity through face-to-face interaction, an animated teaching performance, and an embodied human response. Asynchronous on-line computer interaction provides a very different mirror and set of responses to our presentation of self.

Sherry Turkel [25] has noted that the computer and the internet are the leading technologies moving us from a modernist culture conceptualizing a unitary core identity to a postmodern culture advancing the notion of multiple identities. Further, the “romantic reaction” to cyberculture is founded upon the objection to “disembodied” human interaction and the value placed on human emotion and “knowledge which arises in subtle interaction with the environment.” The opposition and resistance to ALN-style teaching and learning might, therefore, be viewed as not only the product of an attachment to an established practice but also a genuine concern with and fear of an alternative identity defining (or disrupting) process.

It is worth noting, in this regard, that I have observed far less faculty opposition to the televideo transmission of classroom lectures despite the fact that this delivery mode poses a potentially greater threat to faculty job security and possesses none of the interesting pedagogical features of ALNs (e.g., interactivity, active learning, collaboration). The lower levels of opposition to this

distance learning mode may be due to the fact that *the teacher-centered physical classroom setting is retained at both the points of transmission and reception*. This would suggest a corollary hypothesis: **that the receptivity and perceived legitimacy of new educational delivery modes is strongly related to the extent to which these instructional technologies reinforce or retain the central elements of the institutionalized and identity-enhancing classroom setting.**

#### **IV. PROSPECTS FOR ORGANIZATIONAL CHANGE AND EDAGOGICAL TRANSFORMATION**

If the institutionalization of classroom teaching is one of the major obstacles preventing the adoption of ALNs, then it logically follows that the "deinstitutionalization" of this learning mode may be a necessary condition for the widespread use and acceptance of ALNs and other alternative instructional technologies. The institutionalist model, and particularly the new institutionalism, has tended to focus on the processes that reinforce and preserve existing practices and promote inertia. However, organizations do change and long-standing practices are often discarded and replaced by new administrative procedures and organizational processes [26]. Oliver [27] presents a model of deinstitutionalization that identifies some of the central factors and conditions promoting the deinstitutionalization process.

Deinstitutionalization is defined as "the process by which the legitimacy of an established or institutionalized organizational practice erodes or discontinues. Specifically, deinstitutionalization refers to the delegitimation of an established organizational practice or procedure as a result of organizational challenges to or failure of the organization to reproduce previously legitimated or taken-for-granted organizational actions" [24, p. 564].

Oliver outlines the various intraorganizational and external environmental pressures that might facilitate the deinstitutionalization of institutionalized practices. We have already noted that there are significant external and environmental pressures that would suggest both the application of new instructional technologies and the implementation of alternative delivery modes. It is possible that, over time, these pressures might erode some of the attachment to institutionalized patterns of educational delivery.

Among the intraorganizational factors - such as increasing workforce diversity and increasing turnover and succession -- that might be applicable to higher education, it is important to emphasize that the primary socialization mechanisms that most of the professoriate have been exposed to are remarkably homogeneous on the question of classroom pedagogy and the illegitimacy of non-classroom delivery modes. Furthermore, there is certainly no necessary relationship between the groups typically associated with diversity efforts -- people of color and women -- and the propensity to embrace the application of instructional technologies. Thus, many of the intraorganizational factors, even when present, may not have the expected deinstitutionalizing effects on institutionalized pedagogical practices. On the question of turnover and succession, however, it is likely that younger faculty members will have had greater exposure to various forms of computer technology either directly related to their graduate work and training (word processing, graphic design, statistical analysis) or indirectly through the increasingly widespread use of electronic mail communications and internet information searching.



One of the most important factors cited by Oliver, that originates at both the intraorganizational and environmental levels, is the growing pressure for organizations to clarify goals and demonstrate efficient goal attainment and accountability to external regulating bodies and constituencies. As this applies to higher education, and as the struggle over outcomes assessment has clearly demonstrated, there are great difficulties establishing a consensus over educational goals, or the means to measure them. In such a context “organizations depend less on concrete indicators of successful performance to determine the appropriateness of an organizational practice and rely more on the confidence and good faith of their internal participants...or on collectively generated understandings and consensual beliefs about the most acceptable structures and procedures for achieving organizational objectives” [27]. Since there is very little agreement over how to measure educational performance and outcomes, and there remains a dearth of acceptable research results on the efficacy of ALN-style approaches, standard operating classroom pedagogy carries the day and retains collective value.

Another intraorganizational force that might contribute to a reassessment of institutionalized forms of organizational practice is “declining performance or crisis.” Based on my discussions with other faculty members about classroom teaching experiences, there is considerable frustration and dissatisfaction with various aspects of the teaching and learning process. One often finds the defense of the classroom coupled, at least among the more reflective faculty members, with the acknowledgement that the lecture mode of presentation does not seem to stimulate the students or always produce the desired results.

It is here where professional identity, at once a source of opposition and resistance, can be turned into a source for transformation and change. There are two interrelated ways to think about this strategy for change. First, the professional identity of the professoriate is shaped not only by the classroom performance and the public presentation of ideas but also by an expressed concern with effective and innovative pedagogical techniques. Discussions about pedagogical techniques and outcomes -- what I call the “pedagogical hook” -- represents a powerful form of leverage for opening up dialogue about alternative educational delivery modes, including ALNs. For example, a pervasive complaint among faculty pertains to the problem of the “silent classroom” where students dutifully attempt to write down everything that is said or scribbled on the board but seem, at the same time, strangely disengaged and unwilling to participate [28]. If these widely perceived problems can be associated with the traditional classroom environment and teacher-centered delivery mode, it will contribute to the deinstitutionalization or at least the de-sanctification of this classroom model and move faculty toward a greater acceptance of alternative classroom and non-classroom teaching and learning modes.

It is important to also emphasize in these discussions that the classroom institution shapes the identity and behavior of students as well as faculty. While there are a wide variety of explanations for the apathetic behavior of college students, one simple explanation is that the experience of students in a long series of classroom situations has produced a particular form of “appropriate behavior” characterized by deference, passivity, dependence, and even fear. In short, a great deal of student classroom behavior is learned in primary and secondary education and reinforced at the college level. When you remove students and faculty from the conventional classroom setting, students are freed from many of these constraints and role behaviors, and faculty are forced to devise alternatives to the lecture format. This opens up the possibility and opportunity for new learning behavior on the part of students and new pedagogical strategies on the part of faculty. This kind of analysis of classroom teaching is consistent with the “systems thinking” underlying in models of organization learning and change [3].

There is a second and closely related means by which professional self identity can be garnered toward organizational change. An identity that is shaped by classroom presentation, and that is contingent on the dynamic of a "looking glass self," may actually be deflated rather than reinforced in a classroom composed of students who, in their behavior and demeanor, appear bored and disengaged. In fact, the demoralization of many faculty can be attributed to the seemingly "dead-zone" response to what are regarded as lively and controversial lecture topics. In this context, the shift to a virtual classroom, where presentations can be delivered in written form, and interaction can take place after some reflection and thought, may be a greater identity enhancing experience for some faculty than the classroom. There is considerable evidence that people turn to the internet -- with its disembodied and virtual forms of interaction -- as a means to recapture an identity or sense of community that is lacking in their "real" day-to-day lives [25].

## V. CONCLUSION

These various strategies for change are not meant to suggest that faculty members, once these points about the conventional classroom have been advanced, will be ready to jump on the ALN bandwagon. Rather, the objective is to convert what may be outright hostility and a perception that ALNs are totally illegitimate into a greater acceptance of ALNs on the basis of their ability to address some of the pedagogical problems faced by all faculty. While faculty members may be unwilling to relinquish their attachment and devotion to the conventional classroom institution, they can better appreciate the reasons why other faculty might want to experiment with ALNs and they may even be interested in developing some kind of on-line web conference for their classroom course as a way to extend the classroom beyond the spatial and temporal confines of four walls and seventy-five minute time limits. This is an important intermediate application of instructional technology between the pure classroom and the exclusively online delivery modes.

In conclusion, the future of ALN-style teaching and learning will depend upon the acceptance and receptivity of teaching faculty to this and other instructional technologies and alternative learning modes. As human organizations, institutions of higher education are constrained by habit, tradition, and culture. These represent the most significant obstacles to organizational change and they therefore must be recognized and addressed in order to realize genuine pedagogical and institutional transformation.

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Synchronous and asynchronous learning technologies are the two most common online learning types (Hrastinski, 2008; Er et al., 2009; Simonson, Smaldino, Albright, & Zvacek, 2012). The purpose of this article is to discuss the advantages of using both synchronous and asynchronous technologies in an online learning environment. Individualized Pacing Asynchronous learning technologies have been defined as personalized learning tools (Lorenzo & Ittelson, 2005). Journal of Asynchronous Learning Networks, 1(2). Retrieved from <http://fie2012.org/sites/fie2012.org/history/fie97/papers/1039.pdf>. Diaz, L. A., & Entonado, F. B. (2009). Are the functions of teachers in e-learning and face-to-face learning environments really different? Asynchronous learning is a student-centered teaching technique in which online learning resources are used to enable information sharing between people in a network. In asynchronous learning, information sharing is not limited by place or time. Asynchronous learning is facilitated by media, such as email, online discussion boards, email lists, blogs and wikis. There are many differences between Synchronous and Asynchronous Transmission. One of the primary difference is that Synchronous Transmission is clock pulse driven whereas, Asynchronous Transmission is event driven. In this article, we will explore the differences between them. Difference Between Synchronous and Asynchronous Transmission. April 16, 2016 22 Comments. In the previous article, we have discussed Serial and Parallel Transmission. As we know in Serial Transmission data is sent bit by bit, in such a way that each bit follows another. It is of two types namely, Synchronous and Asynchronous Transmission.