Entering college students commonly complain of being inundated with confusing information about attending a college or university, while student services personnel complain that regardless of the efforts placed on making the information "user friendly," students never seem to assimilate what they receive. This paper analyzes the literature and examines the sequence of time frames within which student decisions are made during their transition to academic life. The review finds six distinct time periods in students' transition to college: (1) the initial inquiry to acceptance; (2) the acceptance to the student's summer orientation visit; (3) the summer orientation visit itself; (4) the student's arrival on campus before classes begin; (5) the student's first semester; and (6) the student's second semester. The review finds that student decision-making processes can be described using information management strategies of prototype-matching and striving-for-future-selves. The paper makes the case that universities and colleges can most effectively present different information and services to students by knowing the particular time period they are in and the particular information-processing strategy being used. Contains 69 references. (GLR)
Prototype Matching and Striving for Future Selves: 
Information Management Strategies in the Transition to College

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Abstract

This paper analyzes literature to present a sequence of decisions that students make in their transition to college. The review finds six distinct time periods in the formal process students go through, and finds that their decision-making processes can be described using information management strategies of prototype-matching and striving-for-future-selves. The paper makes the case that universities and colleges can most effectively present different information and services to students by knowing the particular time period they are in and the particular information-processing strategy being used.
A common complaint from new students is of being inundated with confusing information, almost from the moment they make their initial inquiry about attending a college or university. The corollary complaint from student services personnel is that regardless of the efforts placed on making the information "user friendly," students never seem to assimilate what they receive. Some marketing guidance exists to help institutions provide information to students effectively, but little exists that provides a "roadmap" that describes which information is most appropriate to provide to students at which times during the roughly two and a half years from when the student makes an initial inquiry about the institution to the completion of his or her first year.

This problem was examined in this paper by (1) looking for decisions that students had to make during their transition to college (defined here as the time from initial inquiry of the school through their first year), (2) mapping these decisions into a temporal sequence, and (3) identifying how institutions could provide helpful information based on these decisions.

A comprehensive review was made of the higher education literatures on orientation and recruitment programs, and college life transition. This review found that the time spanning the period defined above as the transition to college could be divided logically into six time periods. Two information-processing strategies were identified describing how students managed information and made decisions through these time periods. Each of these six time periods define a specific set of questions and decisions that students have to make. A series of charts are presented that summarize the decisions that students made in each time period. These charts will also be used to organize the content of the articles reviewed to generate a set of response guidelines to help an institution best address their students' questions and decisions.

It must be noted that the literatures on this topic, in general, have studied traditional students (those age 17-18) in traditional institutions (full-time, residential colleges and universities), who come from majority-status backgrounds. Since this review must rest on the literature available, it must be recognized up front
that the time periods and processes identified may best describe a shrinking segment of the college-bound market. Therefore, whenever possible, implications and deviations for older students, ethnic minorities, and those coming from lower socioeconomic backgrounds will be highlighted. Furthermore, the transition process is not uniform—different students will make decisions at different times (for example, Hanson & Litten, 1981, and Litten, 1982, found that men and women go the process differently in choosing colleges, and parents' education effected the timing with which students make choice decisions). The sequence of decisions presented, then, should be seen as an idealized one that serves to facilitate discussion of the processes and strategies that students bring into play.

The Transition into College

Students become part of a university community through a process that has been described in the literature as integrating into, or finding a niche within the university community (for summaries of this perspective, see Brower, 1992; Cabrera, Castaneda, Nora, and Hengstler, 1992; and Tinto, 1987). The literature review undertaken here found two information-processing strategies that described the cognitive and emotional processes that students went through when finding their niche within the university.

Prototype Matching

First, students' initial processes of information could be described as being based on a model of prototype matching (Cantor & Mischel, 1979; Cantor, Mischel, & Schartz, 1982; Niedenthal, Cantor, & Kihlstrom, 1985), where students make decisions about how well they will fit into the institution by matching themselves to an imagined "prototypical" student at the institution. For example, Maguire and Lay (1981) found that students decided to either go to Boston College vs. somewhere else based on the image they developed of Boston College and their match of their own needs and abilities to this image. Kuh (1991) summarized the orientation activities from 14 colleges and universities to find that the most effective activities presented students with language and images that clearly and consistently represented the uniqueness of the institution. Huneycutt, Lewis, and Wibker (1990) found that recruitment improved at Louisiana Tech when their materials were shaped by the specific needs of the students (and their parents), which themselves were based on the images that students and parents already held of Louisiana Tech.
Niedenthal, Cantor, and Kihlstrom (1985) found that students attending the University of Wisconsin made housing choices (living in the dorms, a co-op, a fraternity or sorority, or living in a private apartment) by matching themselves to the image they had of the typical student who lived in each of these types of living arrangements.

The prototype-matching process suggests that students ask themselves the following types of questions as they determine their fit with an institution: How will my interests match those of students I imagine attending this university? Will I fit in socially with the students I imagine being there? Will my skills and strengths be appreciated based on what I imagine are the attributes desired of students at this university? Thus, for the prototype-matching strategy to be an effective means of decision-making, students must be given enough of the "right" kind of information to enable them to develop the "right" (i.e., accurate enough) prototypes of the institution and of the students who attend.

The prototype-matching strategy of decision making has its pitfalls. Studies have shown that the prototype that one develops defining the category (or in this case, defining the college or university) represents a "fuzzy set:" the category defined by the prototype is like a circle that is clear and exact in its center, but its boundaries are blurry at the periphery where it overlaps with alternative categories (Salovey & Turk, 1990). It is easy to use prototypes to determine exact matches, but more difficult to know where to "draw the line," to determine whether less-than-perfect matches belong in one category or another. For example, if a male student's image of the prototypical male student attending State U. is of someone who cheers the football team, is involved in fraternity functions, and is majoring in pre-business, it will be easy to make the decision to attend State U. if one likes football, plans to join a fraternity, and is interested in a career in business. If, however, one likes football, but isn't interested in fraternity life and doesn't know what to major in, the prototype image of State U. is a less than perfect match, and the student has a much more difficult time using it to determine whether or not he will fit in on campus, or whether he should instead attend Private College (defined by its own prototypical image of an attending student) (see Litten, 1991, for a more full discus of how students make less-than-perfect matches in college choice).
Furthermore, once a match is made using a prototype-matching strategy—once, for example, the student decides to attend State U.—the individual's efforts become directed toward confirming the appropriateness of the match (Snyder, 1980): the student will try to make his image of himself and the prototype match more closely. Thus, after choosing to attend State U., the student above who initially had no interest in fraternity life, may be overhead saying, "Maybe I will check out a fraternity."

Striving for Future Selves

The second information-processing strategy that emerged in this review was that once students made the decision to attend an institution, they then made decisions based on a process that has been described as striving for future selves (for reviews of this work, see Markus & Nurius, 1986; and Brower and Nurius, 1993). According to this process, students develop future images of themselves at the institution, both positive and negative, and then strive to achieve their desired images (while avoiding their undesired images). For example, Kuh's (1991) survey of 14 colleges and universities found that one of the most helpful roles played by admissions and orientation programs was to help students develop appropriate expectations of themselves in college. This finding was also supported by a national longitudinal study of "anticipatory socialization" done by Pascarella, Terenzini, and Wollle, 1986. Kramer and Hardy (1985) found that Brigham Young University students who sent in their tuition deposits were more likely to actually enroll when trained upperclassmen were used to both help them imagine themselves at BYU and help them connect to available resources. Earlier, Kramer (Kramer & White, 1982) found that on-going advising relationships with faculty mentors helped students develop better images of themselves on campus (and a better image of campus resources), leading to better outcomes in their first year. And as a final example, Lange & Gentry (1974) reported that the University of California - Irvine helped students succeed in school when they provided them with a week long live-in experience that provided them with opportunities to "try out" future selves by talking with various academic programs and student organizations and activities.

The striving-for-future-selves strategy itself appears to consist of two processes: (1) students must first develop images of themselves on campus projected into the future, and then (2) must develop the procedural knowledge needed to "get there from here." Thus, a student develops an image of herself as a
member of the Engineering Honors Society, and then engages in behaviors that she perceives as helping her achieve her desired self. Note, too, that students will often monitor the discrepancy between their current self and a negative future self (flunking out of school, for example) in order to maintain the barest minimum between the two—allowing them to do the minimum work required to keep themselves from actually being kicked out.

The striving-for-future-selves strategy, too, has its pitfalls. Markus & Nurius (1986) note that people often highlight the glamorous aspects of future selves, and minimize the mundane or undesirable features. In addition, people tend to short-change the second process of developing procedural knowledge. Thus, the striving-for-future-selves strategy can sometimes maximize discrepancies between one’s current life, filled as it is with trivial and mundane daily tasks, and one’s ideal image of a glamorous and exciting future life that bares little resemblance to reality.

Furthermore, find Tversky & Kahneman (1974), both the prototype-matching and striving-for-future-selves strategies rely on our ability to create vivid and coherent mental images from imperfect and sometimes incomplete real-world information. They are necessarily shaped by our expectations and desires. And once these mental images are created, they are difficult to modify, even in the face of accurate, though contradictory, additional information. Evidence of these problems are seen in the seemingly intractable stereotypes of various colleges and universities, as well as in the popularity of “glamour” majors that students cycle through in their early college years.

Nevertheless, prototype-matching and striving-for-future-selves are powerful strategies that students already use naturally when making decisions and managing information. Understanding their use in the transition to college will allow us to better help students make the decisions they need to.

Decisions Students Make in the Six Time Periods in the Transition to College

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Literature was reviewed in the areas of orientation and recruitment programs, and college life transition. This review found six time periods that described the different sets of decisions that students make from the time they inquire about higher education through the completion of their first year of college:

1. from initial inquiry (or solicitation) to acceptance (sending in a tuition or housing deposit),
2. from acceptance to the student's summer orientation visit,
3. the summer orientation visit itself,
4. the student's arrival on campus before classes begin,
5. the student's first semester,
6. the student's second semester.

Each period will be described below in terms of the decisions that students have to make and the responses that colleges and universities can provide. Within each time period, the activities that students engage in pertaining to prototype-matching and striving-for-future-selves will be highlighted. Where appropriate, applications and deviations for so-called non-traditional students will be discussed. Each student and institution decision and action found in the literature review will be documented on the charts according to its sequence number in the reference section.

**Time Period 1: From initial inquiry to acceptance.**

Chart 1 summarizes the first time period of the sequence, beginning with the high school student's first inquiries about schools, and ending with choosing a school in which to enroll, marked by sending a tuition or housing deposit.

This time period encompassed what has been studied as "college choice," a relatively large body of literature describing how prospective students choose particular institutions. It is beyond the scope of this paper to present this literature in detail; instead it will be summarized in terms of the objectives stated above. The
interested reader is referred to Hossler, Braxton, & Coopersmith (1989) for a thorough review of the college choice literature.

The college choice literature summarizes the decisions that students make with Hossler & Galligher's (1987) three-step model: predisposition (describing how students ready themselves to select a school); search (describing students initiating their search process--"casting their nets" for schools to consider); and choice (describing how students evaluate schools on their "short list" to make their selection). Furthermore, once students progress from predisposition to search, or search to choice, it is very difficult for them to back up. It was very uncommon, for example, for a student who has already developed a short list to consider seriously a new institution that they had not considered before.

The prototype-matching strategy is most salient for students during this time period (Kuh, 1991; Wofford & Timmerman, 1982; Zemsky & Oedel, 1983), with students seeking out colleges and making choices about them based on their perception of how well they fit the college community (Chapman 1979; Kohn, Manski, & Mundel, 1976; Radner & Miller, 1970). Lewis & Morrison (1975) found that students developed their institutional prototypes using information from (in rank order of frequency) catalogues, visits to the institution, counselors, students already enrolled, and admissions officers. Cibik (1982) found that the majority of students first heard about institutions from their friends. Kotler & Fox (1985) reiterate the fact that students' institutional prototypes are often based on incomplete and sometimes inaccurate information, and formed their prototypes well before any first-hand knowledge of the campus (the visit, in fact, often was used to validate the already-formed prototype).

Hossler, et al. (1989) identify the need for good research that describes how students form their prototypes--where the information comes from and what information is influential in modifying prototypes. Several articles made starts to identify the features most often used by students and parents for creating their prototypes (Hossler & Galligher, 1987; King, Kobayashi, and Bigler, 1986; Kuh, Coomes, and Lundquist, 1984; Maguire & Lay, 1981). Features found to be important included: (1) information on the specific academic programs that were the institution's strengths; (2) the degree of ongoing involvement that students had with peers, faculty, and administrators; (3) the sense of "community" fostered by the institution; (4) the
clarity of the institution's purpose; (5) its size and location; and (6) information about the institution's athletic facilities and programs.

Finally, students' prototype-matching college-choice process was found to be influenced by students' striving-for-future-selves processes. Gilmour, et al. (1978), found that students' matching was influenced by their self-appraisals and future career aspirations. Students held several "matches" to different colleges at the same time, based on the person they imagined being at that institution (i.e., "if I go to State U., I can get my Accounting degree; if I go instead to Liberal College, I can pursue my interests in writing...”). The prototype developed by the student, then, as well as the match made, was not based exclusively on information that was given to him or her.

It might also be said that the institution engages in prototype-matching in its decision to accept specific students. The admissions process may be construed as one of answering the question, "How well does this particular applicant match the type of student we want?" Wofford & Timmerman (1982) describe the application process as being similar to a courtship. Thus, formalizing, specifying, and clarifying the characteristics that might be expected from each partner in the match of student and school should make for a greater rate of "happy marriages," that is, a greater number of students who are happy with their school choice and who achieve success once enrolled (Maguire & Lay, 1981).

At the same time, this prototype-matching process to determine "happy marriages" may particularly work against students from lower socioeconomic backgrounds and first-generation college students. First, colleges may not send recruitment materials to these students since they are not considered most likely candidates (Hossler, et al., 1989). Second, these students are more likely not to have college-educated parents, itself found to influence participation in the college choice process (Manski & Wise, 1983), resulting in less access to information about colleges. In general, students from lower socioeconomic status backgrounds and first-generation college students appear to receive less factual information to help them develop their prototypes, and appear not to fit an institution's prototype as well, unless the institution is making a concerted effort to recruit from these populations.
As a final point to make for this time period, it was found that while institutions commonly send out information to high school students during their junior year, two articles (Hossler & Gallagher, 1987; Huneycutt, Lewis, & Wibker, 1990) found that about half of their sample of students had already made their initial "cut" of schools sometime before the middle of their junior year. This is particularly important given Hossler's (1989) finding that students did not "back up" once they have narrowed their list of serious candidates. The authors recommend sending recruitment materials to students at the end of sophomore year or at the latest, at the beginning of junior year. Again, this may be particularly important for recruiting students with lower socioeconomic backgrounds and from first-generation college students since they do not receive this information as early as other college-bound segments of the population.

**Time Period 2: From acceptance to the student's summer orientation visit.**

Chart 2 summarizes the student's and school's actions and responses from the student's formal school choice up to the summer orientation visit.

This time period appears to be described most often as a "waiting period" between the acceptance decision and the on-site orientation. One article, noting that 20% to 50% of students who send in deposits do not enroll in the following fall, described the institution's primary task as having to keep the student's interest and enthusiasm "warm" during this period (Kramer & Hardy, 1985). Institutions that successfully enroll their prospective students help them reinforce their prototype match, and help them begin to develop their future selves at that particular institution. The information sent to students can be packaged with these objectives in mind.

Information is passed back and forth between student and school--financial aid and housing forms, information about student organizations and academic programs. Some of this information requires a response from the student, but much of it does not. It is often difficult to determine how well students assimilate the information that does not require a response, but is nevertheless important. For example, a
school might send incoming students a brochure describing extracurricular activities and student organizations. And while the student's response may not be important to the mechanics of post-admission processing, it is clear that first-year students who become involved in campus activities do better as freshman and throughout their undergraduate careers (Pascarella & Terenzini, 1979). This information might therefore be modified to require a response from students. A check-off sheet could be sent that asks students to identify the activities and/or organizations of interest, and return the form to the school. This information could then be distributed to the appropriate student organizations for them to make contact with the student early in the transition process.

Those students who are required to report for remedial instruction during the summer will receive information at this time about when they need to arrive on campus and begin classes. At some schools, all students are required to begin entry into some kind of mentor or peer assistance program, such as an ongoing orientation group led by an upperclassman (Kramer & Hardy, 1985). The college may ask for further personal information in order to match students with a mentor, and then form groups or matches for the fall semester or throughout the year.

During this time period, those students who actually plan to attend the institution to which they have sent their deposits will begin to make their future selves at their chosen institution more concrete: they begin to "see" themselves as a student attending that school. While they previously may have seen themselves as college-bound generally, more specifically as "Ivy League material," or even more specifically as future engineers, they are now fine tuning their self-labels in ways that help them feel part of the college campus they have selected. They will begin to imagine themselves at their selected college, initiating the striving-for-future-self process.

This process is reinforced by others when they act toward the student in ways consistent with their college prototype (Festinger, 1942). Imagine how parents and relatives act toward their students at high school graduation parties, and how parents introduce their sons and daughters to friends and relatives once college decisions are made. Two articles (Kramer & Hardy, 1985; Morstain, 1972) found that assigning upperclassmen to incoming students helps them feel more identified with the school. These peer
mentors/advisors answer questions, offer encouragement, and generally support and help develop the college-specific future selves of new students.

Interestingly, this self-labeling, or the future selves that students develop, no doubt changes from generation to generation, and within and among generations (Behnke, 1990). A political student in the late 1960s differed from "Joe College" in the 1950s. And while many middle class female students in the early and late 1950s attended college in order to find a suitable mate (Vetter & Lewis, 1964), that was no longer the case ten years later (Harris, 1973a & 1973b). Thus, it is suggested by these articles that a particular school can do quite a lot to manage the information that they send out to students to help them shape their future-selves in ways that the school would feel productive for entry into its campus community.

**Time period 3: The summer orientation visit.**

Time period three describes the on-site orientation program that most often occurs during the summer between high school graduation and the beginning of classes in the following fall. The literature reviewed appeared to describe these programs as designed to accomplish two tasks: (1) preparing students academically for the fall semester—engaging in academic advising and registering students for classes, giving placement exams, etc.—and (2) initiating students' "social integration" to the campus.

Pascarella, Terenzini, & Wolfe (1986) found that participation in the summer orientation program significantly increased students' likelihood to stay in college, however, they found that its effect was indirect. That is, participation in the summer program influenced students' "social integration" (the extent to which students were involved in campus activities; see Tinto, 1975), which in turn influenced student retention. Thus, students participation in the summer program helped them develop social relationships and eased their entry into student organizations and activities.

Interestingly, other studies found that students' most pressing desires for their summer program participation were academic: students wanted to be advised as to their academic programs, and wanted
desperately to be able to register for courses before they arrived on campus (Sagaria, Higginson, & White, 1980; Brinkerhoff & Sullivan, 1982; Chandler, 1972). Other needs that students had included:

1. Help with understanding the requirements, rules, and regulations of the institution,
2. Help becoming oriented to physical locations of campus buildings and services,
3. Help with the social and emotional transition into the campus community,
4. Help with the intellectual transition into college,
5. Help making academic and personal goals, and with longer-range career advising.

Kramer & Washburn (1983) and Twale (1989) found that summer programs were most successful (defined by students' satisfaction ratings) when they contained a primary emphasis on academics, a concern for the individual student, opportunities for faculty interaction, when they took place in small group settings, when they used carefully prepared and presented materials that were made as simple as possible, and when they incorporated material recognizing the stressful nature of the transition that students were undertaking.

Kramer & Washburn further emphasize the point that only materials that had been carefully prepared and simplified should be presented, and that these materials should be those that were absolutely critical to students' needs at that time. They found that, at best, all other materials were ignored, and at worst, they obscured the impact of the important materials. They recommend that institutions develop a "centrality index" to determine what is to be presented during the summer program vs. at another time, forcing program planners to make the difficult decisions to only present at summer orientation the information that is central to that institution's purposes, with the rest mailed out to students at a later time. This exercise forces the institution to make decisions about what it most wants to accomplish during this time period--what it most wants students to understand and retain.

It is within this time period that students' college future selves continue to be defined, and where procedural knowledge (how to "get there from here") is initiated. Students are shown what it's like to actually live on campus, and are often introduced to the institution's "folklore": they learn the school song, they hear "war stories" from peer mentors, they begin to learn about the various professors and courses available to them; in short, they begin to be brought into the "inside" of the institution and begin to gain a picture of daily campus life (see Moffatt, 1989, for a full discussion of student culture). This process will be particularly important for first-generation students since they will have less other information about daily
campus life. The picture initiated in this period is, however, only the precursor to that presented during the next time period.

**Time period 4: The students' arrival on campus before classes begin.**

The fourth period of time in the transition to college describes the student's arrival on campus before classes begin. This time period may be as short as two or three days, and can be as long as a full week, but regardless of its length of time, it is more critical to the student's college success in the absence of a summer orientation visit (Ivey, 1963; Kuh, 1991; Twale, 1989). In addition to the acclimation function of this period, the student for whom this is the first formal visit to the campus must also complete tasks that were otherwise initiated during the summer orientation, such as continuing academic advising, taking placement exams, and registering for classes.

Whereas the third time period initiated students to campus life, the several days that students have prior to the beginning of classes formally begins this process. Witkin (1971) and Lange & Gentry (1974) state that after registering for classes, foremost on students' minds is meeting people and immersing themselves in the student culture. For traditional-age students, this is often the first time away from home; much to the chagrin of the dormitory staff, students often feel free of parental restrictions and do not feel academic pressures interfering with their social activities. They are often hyper-energetic and hyper-social during this period (Blimling, 1990).

From the standpoint of the decisions and tasks that students engage in, of course, this time period is not simply fun and games. Important processes are initiated and services are introduced for how students can develop and achieve their future selves. Students begin to get a sense of how to manage their time and what their daily life will be like: They begin to learn how long it will take for them to get from their last class to their residence hall. They begin to learn the most efficient ways to schedule meals, and what to
avoid in the cafeteria. They learn the differences between the various restaurants and night spots near campus; they discover which pizza places deliver the best pizzas, and at which hours of the night. Students begin to learn how their daily patterns are likely to harmonize with those of their roommate.

For full time, residential students, this period also involves setting up their living spaces. All students will buy books. Some will look for jobs. Institutions will very often begin on-campus mentoring programs during this time period, with some structuring student-faculty get-togethers that initiate faculty contacts (Miller & Brickman, 1982).

This short time is in many ways packed to capacity with activities and information, and students' behaviors are often directed during this time by their fantasies of college life (Brower, 1990). They "try out" their student roles in earnest without the academic demands of the classroom. An institution might think of its role as helping students modulate from fantasy to the reality of daily college life. It is during this time period that students' future selves become more sharpened and fleshed out with procedural knowledge, and institutions can play a vital role in this process by providing students with direction and guidance, by providing valid and attractive role models, and by making very clear the norms and expectations for academic and social performances.

Time period 5: The student's first semester.

The span of time beginning with the start of classes to the end of first semester exams constitutes period five. Some students are doing reasonably well: attending classes, assessing academic and interpersonal progress, planning for the second semester. Some students will begin to clarify an academic direction; others will reinforce or question one with which they entered the university. All students should be developing skills such as writing, speaking, arguing, thinking critically, etc. The school may assist students with planning for second semester coursework. It may provide or require assistance in skill development, either through required or remedial coursework.
An increasingly common method to provide a prevention-oriented assistance package to students is through "freshman seminars" or "University 101" courses (see Gardner, 1986, for a description of one popular version). Boe & Jolicoeur (1989) report that over 77% of surveyed institutions offer a course on "Coping with college," and Bron & Gordon (1986) report that 26% of such courses are offered for credit. Most reports found evidence that these courses helped ease the student's social and emotional transition to college life (Boe & Jolicoeur, 1989; Patrick, Furlow, & Donovan, 1988), and some found evidence for their role in increased retention and higher GPAs (Bron & Gordon, 1985; cf., Robinson, 1989). Other studies have found that what is effective about these courses is that they offer students increased interactions with faculty and staff (Kramer & White, 1982; Morstain, 1972; Blimline & New, 1975). Regardless of the approach, it is becoming increasingly commonplace for institutions to recognize students' needs in a wide range of academic and non-academic domains within their first semester.

Ideally, students will be monitoring themselves in terms of academic progress and continually revising behavior in order to maintain optimal progress. At the same time, students should be monitored for adequate progress and signs of any potential or manifest difficulties. It is at this point that the question of performance monitoring and evaluation arises for both student and school: How often should student's progress be monitored? How should the monitoring take place? And, how should a standard for progress be defined?

Students who monitor their own performances infrequently are less likely to succeed than students who monitor their performances frequently throughout the semester (UW-Madison Faculty Senate, 1993). At the same time, simply increasing the frequency of monitoring is not enough. Brower (1991) found that almost all students were aware of their academic and non-academic performances, but only some appeared to use this information to change their day-to-day behaviors. Thought of another way, while all students appeared to have the capacity for self-observation, not all students knew what to do with this information. Programs to help students develop their procedural knowledge for self-management can be particularly effective here--i.e., programs that help students know how to monitor their own progress relative to their goals, in areas as diverse as studying, to "responsible drinking," to making friends. Skills-training programs
appear particularly well-suited for this purpose, providing both instruction and a forum for practice (see Rose, 1989, for a general reference on this approach).

Performance monitoring and evaluation are also concerns for the school. How often should students officially be monitored for progress, and for what kinds of progress: academic only? or social and psychological well-being? Should some students be monitored more closely? These questions are intertwined with the issue of in loco parentis: Is frequent attention to student well-being the proper role of educators in the university? Should this role be relegated to student services personnel who are trained in the area, but who are not professors? Or should student well-being be handled as a 'laissez-faire' issue by institutions dedicated to teaching? Certainly, institutions vary on their attitude toward this issue, however, the literature bearing on these questions emphasizes the value to student development achieved when institutions make a proactive, formulated decision on how to monitor its students across a range of areas (see Baker, 1967, for a more complete discussion of institutional positions on the issue of in loco parentis).

Time period 6: The student's second semester.

Time period six involves the second semester. By and large, students' second semester academic activities are essentially the same as those of their first semester. At the same time, students' "context" or evaluative framework begins to subtly change; they now have one semester of actual college experience to go on. The student attends classes, but now does so against an assessment of the first semester (both academically and personally). At the beginning of their second semester, students may further clarify (or question) academic, social, and personal directions. Simultaneously, the university will likely be monitoring the student's academic progress, and if so, the student will meet with advisors or mentors to discuss first semester outcomes, and to reinforce or revise behaviors. These contacts may extend to include plans for the summer and for the second year.

The subtle, or not-so-subtle, change in students' perspective is one of time orientation: they are "looking back" less, in terms of what they are leaving behind (high school friends and activities), and
beginning to "look forward" to the coming years. Their future selves continue to become more clear and vivid, and they are beginning to gain the procedural knowledge needed to achieve them. Of course, institutions should continue to see this process of striving-for-future-selves as at a very early stage: students really do not settle into their academic programs and their extracurricular activities until well beyond their first year (Pascarella & Terenzini, 1991). Nevertheless, relative to where they were less than six months previously, students are virtual experts at being college students.

While the context or orientation for students' decisions and tasks change from first to second semester, it may be that the institution has remained particularly passive in its response to this change, that is, treating students no differently from first to second semester. Is the institution more lenient with a first-semester students' grades and behaviors than it is with those for a second-semester student? Is there more flexibility in the first semester in terms of the procedures for drops and adds? The literature is silent on whether it is better for institutions to make allowances for first-semester behaviors as compared to those of second semester, vs. making its rules and regulations clear from the outset. Arguments could be made both ways. Initial leniency may allow for students' understandable confusion and turmoil early in the year, and thereby giving new students a cushion for their early stress and strain. On the other hand, changing the rules on students may in fact prolong their confusion, and may even engender frustration and resentment towards the institution.

By the second semester, students are beginning to switch from questions concerning whether or not they fit in, to questions concerning how they can accomplish what they want while they are here. Students are continuing their shift from a prototype-matching strategy to a striving-for-future-selves one. Institutions can be alert to how their programs and services can assist students make this shift.

Discussion

The problem that this literature review was meant to address concerned how to get the right information to students at the right time, by charting the decisions that students make within each time period during the transition to college. Clearly, the decisions required of a high school student exploring
higher education choices are different from those required of the same student once accepted for admission to a college. Likewise, the decisions and expectations facing students arriving on campus for a summer orientation are different from those facing the same student arriving on campus immediately prior to matriculation. Services and information directed at students must address the specific objectives of each time period in this transition. The six time periods presented here provide one way to organize the tasks and decisions that students make during their transition into college.

The literature review revealed two strategies--prototype-matching and striving-for-future-selves--that describe how students make decisions and manage information through their transition into college. Furthermore, the processes of prototype-matching and striving-for-future-selves themselves reveal three related, though separate, processes that students engage in:

1. Students search through college materials to determine the degree of match between themselves and their image of the "typical" student at the college. Students here must develop their images of the institution per se and students attending it.

2. Once a student determines which college to attend, she begins to develop future images of herself at the institution. This process continues throughout the pre-matriculation visits and through the first year.

3. As the student's future selves become clearer and more salient, she begins to develop and recruit the necessary skills and resources that will enable her to achieve her desired future selves (while helping her avoid her undesirable ones).

It is important to see the sequence and characteristics of the decision-making processes described here as a rationalized and idealized version of the transition to college. Some students, for example, will be thinking ahead about majors as soon as they apply to school; others will not think of a major until they are forced to during the middle of their college career. One can read the time periods presented here as a blueprint for programming, as a way for an administration to make decisions about program development and distributing information based on students' modal responses within each time period.
It is also important to recognize that the literature upon which this review is based has had to rely primarily on traditional-age students attending college full time. Implications and speculations were made to non-traditional student groups throughout the article, yet research must be done on this ever-increasing segment of the college population. For example, it was hypothesized that institutions can expand its application pool by developing diverse institutional prototypes to market to broader segments of the population. But until this hypothesis is tested, it is only speculation. Echoing others in the field (e.g., Hossler, et al, 1989), the almost total lack of information available on so-called non-traditional students is the most serious gap in our literature.

Nevertheless, based on the findings from this review, institutions can conceptualize their new-student programming as needing to accomplish three objectives:

1. In the initial stages of courting students, the institution needs to be sure they are projecting the "correct" prototype to students about who "belongs" there and what campus life is like. The "correct" prototype is one that the institution believes in and accepts, and believes is consistent with its own educational objectives. Questions that can be asked are whether the materials that go out to student present a consistent and coherent picture at all, and if so, whether this picture is the one acceptable to the institution. For example, do viewbooks and other recruiting and introduction programs present a coherent "prototype" that is neither too narrow so as to be exclusionary, nor too broad so as to be undefined? Is the institution able to present an accurate picture of itself to students?

2. Once students make their decision to attend, the institution then needs to direct its efforts at helping them enliven their positive and desired images of themselves at the institution. These efforts may best be accomplished by gently encouraging students to think about themselves engaged in various activities and courses: What would it be like to try out Russian instead of fulfilling the foreign language requirement with Spanish (which the student did not enjoy in high school)? Can interests in biology be pursued by asking a favorite professor about becoming involved in that professor's ongoing research? More generally, the types of questions that can be asked of students to help them enliven their future selves are those that encourage students to see themselves at the institution, and
to feel what their daily life will be like. The questions, then, are not only ones concerning when course selection or housing decisions must take place, but what will students' lives be like if various decisions are made. What kind of academic, life-style, and time-management decisions will be necessary in order to fill out one's picture of one's future self?

3. Lastly, once the student is able to develop a set of desirable future self-images within the institution, the institution can help provide the student with the resources needed to achieve his or her desired images. The institution can help the student develop the procedural knowledge necessary to "get there from here," and can then offer the guidance and support to help the student begin his or her academic and intellectual enterprise. Note that students can also be served well here by helping them become better able to assess themselves accurately.

Helping students develop and enliven their possible selves, objective #2 above, may be found to be the critical, yet overlooked, step in the transition from presenting students with external college prototypes to presenting them with procedural knowledge. Thus, it is often the case that we say to a student, "So you want to be an engineer. Well, here's what one does, and here's what one makes in salary. Now, here are the courses you have to take to major in engineering..." But we do not often deliberately help with the critical step of helping the student develop a self-image as an engineer. This may be done inadvertently, when we offer internships, and may happen through the socialization students achieve through contact with faculty. But, again, this is rarely done in a planful or intentional way. Helping students develop future selves as engineers may happen best through routine interactions with like-minded peers and faculty mentors, and through learning as much as possible about the day-to-day lives of real engineers: joining engineering societies, doing internships, doing class projects that force the student to come in contact with real engineers to see what their day-to-day life is like.

It is important for institutions to know both what they hope to accomplish and what decisions students are struggling with during each of the six time periods that student pass through in their transition to college. It is hoped that the information presented here will force institutions to begin to determine what they consider central and peripheral at each of these six time periods.
References


Chart 1

**Time Period 1:**
**From initial inquiry**
**to acceptance**

**Student's Decisions/Actions**

1. Requests information on specific school.
   (articles 3, 27, 31, 37, 38, 43, 68)

2. Takes ACT or SAT.
   (articles 3, 24, 27, 38, 43)

3. Reviews and critiques information received and ranks school choices based on developed "prototype" of school.
   (articles 3, 27, 31, 38, 43, 68)

4. Campus visit.
   (articles 3, 27, 31, 37, 43)

5. Applies for admission to one or more schools (submits financial aid forms, test scores, recommendations, and auxiliary materials).
   (articles 3, 27, 31, 37, 38, 43, 68)

6. Parental/friends' advice.
   (articles 3, 27, 31, 37, 38, 43, 68)

7. Chooses school from set of accepts, and sends in tuition and/or housing deposit.
   (articles 3, 27, 31, 37, 38, 43)

**School's Decisions/Actions**

1. Provides requested information to student regarding institution: housing, size, resources, activities, academic programs/majors, student involvement advising.
   (articles 3, 27, 31, 37, 38, 43, 68)

2. Provides information on admission criteria/university goals.
   (articles 3, 27, 31, 37, 38, 43, 68)

3. May actively court student by mail or computer according to probable good match between student and university.
   (articles 3, 27, 31, 37, 38, 43, 68)

4. Processes admission and financial aid application. Admits or rejects; makes financial aid offer.
   (articles 3, 27, 31, 37, 38, 43)

5. Acknowledges intent to enroll.
   (articles 3, 27, 31, 37, 38, 43)

6. Offers opportunity for campus visit, and personal contact with faculty and/or attending students.
   (articles 3, 27, 31, 37)
<table>
<thead>
<tr>
<th>Student's Decisions/Actions</th>
<th>School's Decision/Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Reads and responds to post-deposit information: financial aid, housing, university</td>
<td>1. Sends or presents information on summer orientation, financial aid, organizations, opportunities for career and academic advising, etc. Kind, amount, and specificity vary.</td>
</tr>
<tr>
<td>organizations. Information sent and need to respond vary.</td>
<td>(articles 3, 34, 35, 37, 59, 64)</td>
</tr>
<tr>
<td>2. Narrows socialization/identity from generic &quot;college-bound&quot; to particular school identity.</td>
<td>2. Assign some or all students to peer assistance or mentor program, if available. (articles 3, 35, 59, 64)</td>
</tr>
<tr>
<td>(articles 3, 34, 35, 37, 59)</td>
<td></td>
</tr>
<tr>
<td>3. Decides whether to attend summer orientation or remedial programs, if available.</td>
<td>3. Initiates special program elements for remedial students required to start in summer for special instruction. (articles 3, 34, 35, 59)</td>
</tr>
<tr>
<td>(articles 3, 34, 35, 37, 59, 64)</td>
<td></td>
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<tr>
<td>4. Agrees to participate in peer assistance or mentor program, if available.</td>
<td></td>
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<tr>
<td>(articles 3, 34, 35)</td>
<td></td>
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</tbody>
</table>
Chart 3

**Time Period 3:**
The summer orientation visit

**Student's Decisions/Actions**

1. Decides whether to visit, or fulfills visit requirements.
   (articles 3, 7, 16, 20, 28, 37, 52, 58, 59, 64)

2. Further self-labels as member of a particular academic community. If seeing campus for first time, obtains concrete image.
   (articles 3, 7, 16, 20, 28, 37, 52, 58, 59, 64)

3. Should develop further knowledge of resources and feel for the environment.
   (articles 3, 7, 16, 20, 28, 37, 52, 58, 59, 64)

4. Advised on academic program, and registers for classes, if allowed.
   (articles 3, 7, 16, 20, 28, 37, 52, 58, 59, 64)

**School's Decisions/Actions**

1. Invites or requires student to visit.
   (articles 3, 7, 16, 20, 28, 37, 52, 58, 59, 64)

2. Provides some degree of orientation, varying in depth and duration. Specific functions include:
   a. introduce "feel" or atmosphere or ambiance;
   b. introducing physical structure/tour;
   c. introduce norms and expectations, and "folklore" of institution;
   d. facilitate initial social contacts which may continue in Fall;
   e. begin advising process, register students in classes, meet financial aid counselor;
   f. obtain ID card;
   g. sign up for extracurricular activities.
   (articles 3, 7, 16, 20, 28, 37, 47, 52, 58, 59, 64)
Chart 4

Time Period 4:
The student's arrival on campus before classes begin

Student's Decisions/Actions

1. Begins or continues orientation to campus and locale.
   (articles 3, 6, 30, 37, 39, 46, 64, 67)

2. Locates and explores off-campus resources.
   (articles 3, 6, 30, 37, 39, 46, 64)

3. May begin to clarify time management.
   (articles 3, 6, 30, 37, 39, 46)

4. Sets up residence.
   (articles 3, 30, 37, 39, 46, 64)

5. Buys books.
   (articles 3, 30, 37, 39, 46, 64)

   (articles 3, 30, 37, 39, 46)

7. Meets other students.
   (articles 3, 6, 30, 37, 39, 46, 67)

8. Begins on-campus peer/mentoring program.
   (articles 3, 6, 39, 46, 64)

School's Decisions/Actions

1. Accomplish orientation not completed in time period 3.
   (articles 3, 6, 30, 37, 39, 46, 64, 67)

2. If providing mentoring or peer orientation, begin on-campus phase.
   (articles 3, 6, 37, 39, 46, 64)

3. Provides student with time to explore and orient further.
   (articles 3, 6, 30, 37, 39, 46, 64, 67)

4. Provides and/or requires activities designed to further acclimate student to campus
   (initiated in time period 3): introduce norms, expectations, and "folklore" of institution; facilitate social contacts; sign up for extracurricular activities.
   (articles 3, 6, 30, 37, 39, 46, 47, 64, 67)

5. Advise and register students, for those who did not complete in summer program.
   (articles 3, 30, 37, 39, 64, 67)

6. If living in university housing, help student set up residence.
   (articles 3, 30, 37, 39, 64, 67)

7. If financial aid includes work-study, help student into work setting.
   (articles 3, 37, 39, 46)
Chart 5

**Time Period 5:**
The student's first semester

<table>
<thead>
<tr>
<th>Student's Decisions/Actions</th>
<th>School's Decisions/Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Attends classes.</td>
<td>1. &amp; 2. May monitor student's academic and social progress.</td>
</tr>
<tr>
<td>(articles 3, 4, 6, 8, 36, 37, 48, 53, 55, 57, 64)</td>
<td>(articles 3, 4, 6, 8, 36, 37, 48, 53, 55, 57, 64)</td>
</tr>
<tr>
<td>2. Assesses progress academically and socially.</td>
<td>3. &amp; 4. May assist students in second semester course planning and major completion.</td>
</tr>
<tr>
<td>(articles 3, 4, 6, 37, 48, 53, 55, 57, 64)</td>
<td>(articles 3, 4, 6, 37, 53, 55, 57, 64)</td>
</tr>
<tr>
<td>3. Plans second semester.</td>
<td>5. Provides assistance in academic skill development, either through emphasis in coursework or remedial help.</td>
</tr>
<tr>
<td>(articles 3, 4, 6, 37, 53, 55, 57, 64)</td>
<td>(articles 3, 4, 6, 37, 53, 48, 53, 55, 57, 64)</td>
</tr>
<tr>
<td>4. May clarify academic direction through advising, both formal and informal.</td>
<td></td>
</tr>
<tr>
<td>(articles 3, 4, 6, 37, 48, 53, 55, 57, 64)</td>
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<td>5. Develops academic skills: writing, speaking, argument, critical thinking, etc.</td>
<td></td>
</tr>
<tr>
<td>(articles 3, 4, 6, 36, 37, 48, 53, 55, 57, 64)</td>
<td></td>
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</tbody>
</table>
Chart 6

Time Period 6:
The student's second semester

<table>
<thead>
<tr>
<th>Student's Decisions/Actions</th>
<th>School's Decisions/Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Attends classes.</td>
<td>1. May monitor student's academic and social progress. (articles 3, 37, 48, 53, 64)</td>
</tr>
<tr>
<td></td>
<td>2. If monitoring student, may meet with student via advisor, mentor, or peer to assess first semester behaviors and outcomes, and reinforce or revise as appropriate. (articles 3, 37, 48, 53, 64)</td>
</tr>
<tr>
<td>2. May assess first semester academically and socially; changes behavior in order to optimize outcomes. (articles 3, 37, 48, 53, 64)</td>
<td></td>
</tr>
<tr>
<td>3. Plans summer and second year: school, work, vacation. (articles 3, 53, 64)</td>
<td>3. &amp; 4. If monitoring student, may meet with student to discuss summer and second year plans. (articles 3, 53, 64)</td>
</tr>
<tr>
<td>4. May further clarify academic direction through advising, both formal and informal. (articles 3, 37, 48, 53, 64)</td>
<td></td>
</tr>
<tr>
<td>5. Further develops academic skills. (articles 3, 37, 48, 53, 64)</td>
<td>5. May continue to offer or require assistance in academic skill development. (articles 3, 37, 48, 53, 64)</td>
</tr>
</tbody>
</table>