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ABSTRACT
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research in cognitive psychology which has identified automaticity
and complex problem solving abilities as characteristics of expert
skills. Social constructivism also sheds light on the collaborative
nature of journalism. A description of specific teaching strategies
for the journalism classroom illustrates a model for teaching high
school journalism which involves: (1) understanding the thinking and
culture of professionals; (2) creating a classroom environment that
fosters expert-like thinking and group interaction; and (3)
implementing teaching strategies that assess students' preconceptions
about journalism and enable students to confront these preconceptions
and build new concepts that move them toward expert thinking.
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Creating the Culture of Journalism

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Abstract

The high school journalism classroom provides a natural environment for learning in the context of a discipline's culture. This environment can provide the backdrop for moving the student toward the thinking and behavior of professional journalists. In order to understand this thinking, journalism teachers can turn to the research in cognitive psychology which has identified automaticity and complex problem solving abilities as characteristics of expert skills. Social constructivism also sheds light on the collaborative nature of journalism. In addition to cognitive psychology and social constructivism, a case study of the drafts of one story and experiences in the secondary journalism classroom provide the basis for a model of teaching high school journalism. The steps in that model include: 1) understanding the thinking and culture of professionals; 2) creating an alternative classroom environment; and 3) implementing teaching strategies that assess students' preconceptions about journalism and enable students to confront these preconceptions and build new concepts that move them toward expert thinking. This paper is intended to stimulate interest in applying the research in educational psychology to the teaching of journalism in secondary schools.

See separate abstract.

Creating the Culture of Journalism
Abstract

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The high school journalism classroom provides a natural environment for learning in the context of a discipline's culture.   This environment can provide the backdrop for moving the student toward the thinking and behavior of professional journalists. In order to understand this thinking, journalism teachers can turn to the research in cognitive psychology which has identified automaticity and complex problem solving abilities as characteristics of expert skills. Social constructivism also sheds light on the collaborative nature of journalism. In addition, I draw on experiences writing for a university newspaper and teaching high school journalism to illustrate strategies for the journalism classroom. This model for teaching high school journalism involves: 1) understanding the thinking and culture of professionals; 2) creating an alternative classroom environment; and 3) implementing teaching strategies that assess students' preconceptions about journalism and enable students to confront these preconceptions and build new concepts that move them toward expert thinking.

Creating the Culture of Journalism

The newspaper production classroom in any high school is a mini-culture that is distinct from the rest of the school culture. Students eat food while they are working, they move around the school more freely than other students as they track down information, they take their directions from a student editor rather than the teacher most of the time, and they are involved in working as a team to produce a product. This buzzing community called the high school newspaper, is a context for learning that illustrates the claim from cognitive psychology that knowing something cannot be separated from knowing how to do something (Brown, Collins, and Duguid, 1989). These researchers propose that "situations...co-produce knowledge through activity" (p. 32) and that the goal in any of the disciplines is to move the learner from a beginner toward the advanced skills and thinking of an expert. This growth can be achieved by providing learning experiences or activities in a context that replicates the culture and thinking of that discipline. "Given the chance to observe and practice *in situ* the behavior of members of a culture, people pick up relevant jargon, imitate behavior, and gradually start to act in accordance with its norms (Brown, Collins and Duguid, p. 34)." In order to make the most of this classroom experience for students, the teacher needs to understand the thinking processes of journalists and the collaborative nature of journalistic writing. Then she can use that information to create an env: nment in the classroom that fosters expert-like thinking and group interaction. Within that environment the teacher needs to assess the students' preconceptions about writing and journalism and create learning situations that force students to confront these preconceptions and build new concepts that move them toward expert thinking.

In my discussion I will draw upon cognitive psychology, social constructivism[1], and my twelve years' experience as a secondary journalism teacher. I will also use examples from my own informal research this year as I wrote for a university newspaper. I documented the writing of one story with my own journals, the revisions made in the various drafts, and the revisions suggested by a professional journalist. I will weave these resources into my discussion, dividing the paper into three sections:

1. The Thinking and Behavior of Experts
2. The Classroom Environment
3. Teaching Strategies

The Thinking and Behavior of Experts

One characteristic of professional journalists as well as other experts is the seeming ease with which they complete their tasks. However, teachers and students need to understand

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[1] Constructivism defines learning as the student's own construction of meaning (Perkins, 1991).

that being a journalist isn't a simple endeavor. The ease with which professionals write involves a number of factors. Some parts of the expert's task may be automated, requiring few mental resources to process, and these skills become so routine that they are hard to access and analyze (Anderson, 1983). Another characteristic of the expert's skills is the ability to evaluate and resolve complex problems, using an understanding of how to construct knowledge in a discipline (Wineburg, 1991).

Automaticity

First, I will consider automaticity. Professional journalists can see patterns in the events around them, size up a story, choose an organizational plan from the many options in their repertoires, and meet seemingly impossible deadlines. This response to information is possible because the professional journalist has stored in memory many organizational and thematic patterns for different types of journalistic writing. Van dijk (1988) describes one set of patterns as "news schemata" which he has derived from studying newspapers around the world. Journalists immediately think in terms of leads, main events, context, background, consequences, verbal reactions, and comment, depending on the philosophy of the publication. Van dijk also says that these "schemata" are overlaid on the content of a story, and help to select information and determine the order of presentation, with relevance as an overriding criteria. He calls the resulting ordering of content the "thematic macrostructure" for the story. His concept of news schemata has been traditionally called the inverted pyramid in journalism education. The hierarchy of ideas in each story is the thematic macrostructure.

Chin (1991) found that professionals automatically saw this hierarchy of ideas within the events and the research they compiled. They talked about the main idea in this hierarchy as the "story." They then positioned a summary of this "story" in the first two paragraphs of a news story, thus providing the guiding concept for the rest of the text. In contrast, at the beginning of their graduate program, the students in her study saw the "story" as a report of a meeting as opposed to a main conflict within that event.

In addition, reporters see thematic similarities in news stories. Chin (1991) illustrates how student journalists in a one year graduate program gradually began to recognize patterns in events and learn to spot potential stories that fit these patterns. While covering a city council meeting, one graduate student took a councilman's comments about a proposed road through some wetlands and elicited the reaction of an environmentalist in the community, thus building a story around a conflict in order to draw in readers. The story fit a familiar pattern- the government in conflict with the will of the people. The student was also learning to automatically sift through a city council meeting for stories that would be relevant for the reader.

From another arena, Rachel, the professional journalist I used in my research this year explained that when she starts planning for a story, she quickly searches her mental library for a lead and story type. For example, when asked to suggest a lead for a story about concentrated foreign language classes for graduate students, she had an immediate idea. Since the story involved differences in educational philosophy, she said, "An anecdotal lead would work well. It's kind of an abstract subject." In contrast, beginners may be frustrated in organizing more complex stories because they lack such templates.

In addition to rapid pattern recognition, another aspect of automaticity is that of routines. These are the activities that become automatic with practice. (Leinhardt and Greeno, 1986).

> Routines play an important role in skilled performances because they allow
> relatively low-level activities to be carried out efficiently, without diverting
> significant mental resources from the more general and substantive activities...
> (Leinhardt and Greeno, p. 76)

A number of tasks become routine for journalists, from computer skills, to research procedures, to interview questions, to journalistic style.

As Rachel discussed the revision of my story, she realized how many elements of journalistic style she automatically followed. "A lot of this is just instinct," she said. "I don't realize what I'm doing until you point out all this." Use of the word "said" is one important example of her stylistic routines. When attributing quotes, journalists use "said" or "says." Rachel explained that people just "read right over it" and focus on the content of the quote which implies what is most relevant in the text. She automatically follows these protocols for using the word:

1. Put "said" after a person's name; the person is more important than the verb, ie. "I don't buy it," Martin said.
2. Put said before the person's name if a title is to follow, ie. "I don't buy it," said John Martin, head of the Foreign Affairs Committee.
3. Put the attribution at the end of the sentence unless the speaker's name is needed for clarity or emphasis, ie. The congressional witness proclaimed his own innocence. Senator John Martin said, "I don't buy it." Since a prominent person is disagreeing, identity has priority over the quote here.

Underlying these rules is the concept that the most important or relevant item is placed in a position of importance. The stylistic routines institutionalize that value with automatic rules. The use of "said" is only one example of the routines that reporters incorporate without thinking about them each time they write.

Another example comes from Chin's (1991) study of journalism terminology. The graduate students became aware of the term "news peg" for their stories as they interacted in their internships with other writers. Journalists automatically pegged their stories on a previous series of stories or events in the news which reporters pick up by reading and dialoguing in the news room. When working out of the classroom, students discovered that they had to compensate for their lack of background by spending time in the library reading publications. Thus, tieing in to previous stories becomes routine for professional journalists.

Problem Solving

This automaticity is complemented by the problem solving abilities of experts. Problem solving involves the complex interactions of knowledge and decision making (Swanson, O'Connor and Cooney, 1990). The creation of text involves the interaction of mental models, stylistic constraints, purpose, and interpretations of audience needs. Bereiter and Scardamalia (1987) call this "knowledge transformation" in their models of the composing process. Professional writers no longer put ideas down in a linear way as if telling them to someone, the way beginning writers do. Experts transform their ideas as they plan and as they rework text.

> In each case the contrast is between a naturally acquired ability, common to almost everyone, and a more studied ability involving skills that not everyone acquires... What distinguishes the more studied abilities is that they involve deliberate, strategic control over parts of the process that are unattended to in the more naturally developed ability. (p. 6)

When the student in Chin's study (1991) took information from a city council meeting and juxtaposed it with an interview of an environmentalist, he was involved in transforming and interpreting events for the reader rather than just recording happenings. The perception of the story possibility becomes automatic for the professional, but the construction of the story involves a more conscious interaction of skills. The problem for students will be the learning of each component and then the integration of them.

In another example, McCutchen (1988) studied the thinking of a sports writer as he wrote an opinion column. She found that the various skills involved in the actual drafting process are not independently automated, but that those skills are interactive. The writer was balancing global considerations with specific word and syntax choices. He wanted to entertain the reader, to avoid jargon, and to build credibility, and he decided to do this through his word choice and use of allusion and pun. McCutchen concluded, "The processes that monitor purpose and audience goals were not sealed off from the workings of the language-generation procedures" (McCutchen, 1988, p. 310).

Flower and Hayes (1981) address the relationship of these cognitive processes in their study of the "pregnant pause." They formulated their theories of the writing process based on writers' reports of their thinking during pauses. Flower and Hayes found that the writing of mature writers exemplified a complex model. During the longest pauses, writers were planning for the overall piece rather than the immediate sentence. During shorter pauses they were often working on ways to translate their plans into the immediate text.

> Writers spend time and conscious attention creating guiding rhetorical plans
> which represent not only the audience and the task, but the writer's own
> goals....an important part of being a skilled writer is knowing not only how to
> do this rhetorical planning, but how to embed sentence-level planning within it-
> how to turn intentions and knowledge into text (Flower and Hayes, p. 243).

One seeming puzzle in this research is the extent to which elements of the process are automated and the extent to which several processes are working in short term memory simultaneously, reflecting the problem solving process. McCutchen (1988) described how high level constraints, related to audience and tone, interacted with word choice and syntax. Her subject, the sports writer, was composing an opinion piece in response to a letter. This genre of journalistic text requires different processing from a news story because of the freedom to decide elements of tone and audience (Schumacher et al, 1989). The news story has many more constraints that dictate style choices, such as how to quote sources, a skill which may become more automatic for reporters. Rachel does not have to stop and decide whether to say, "Martin said," or "Martin quipped." However, all journalistic genre require complex processing skills and application of schemata at various stages of planning, researching, writing, and revising. Some of those skills can be automated, but many will have to be juggled simultaneously.

To summarize, some aspects of the work of professional journalists are automated, increasing efficiency, while at the same time other aspects involve a complex problem solving process. Yet, the cognitive processes of experts must also be understood within a social context.

Collaboration

The journalist works within a social organization which is characterized by the dialogues that go on there.

> Journalistic activities and interactions, as well as the actual writing and rewriting of
> news texts, are inherently social....the analysis of source text transformations into news
> texts must be explained in terms of social cognitions within social contexts. (Van dijk,
> 1988, p. 99)

The reporter must build a mental model of the story through dialogue with sources and editors, a process that is essentially collaborative in nature. Sources themselves are busy negotiating with reporters for their view of what is important. Then, the information gathered from interviews and through other media is filtered through the reporter's and editor's evaluative monitors that include news values such as timeliness, prominence, or proximity. In the process, the mental model of the story in the minds of each participant may be evolving. The collaborative task, then, involves negotiating this model as it is translated into a story for publication. In writing the story I used for my research, I learned that each person involved had a different perspective on it. The story was about a psychologist name Robert Burns, who specialized in interpreting people's drawings, including their doodles. Burns wanted me to write about his recent lectures in Japan and the Japanese interest in drawing as symbol, but my editors wanted me to write about doodles. Being a somewhat inexperienced journalist, my attempt at the main idea (nut graph) of my feature story was a bit fuzzy in my first draft. An abbreviated version:

> Robert Burns...has quietly unlocked insights into people's personalities through their drawing for many years. But only recently has he begun to capitalize on his new reputation as the "doodle doctor," a title given him by a *Seattle Times* reporter last year.

My editor revised the story with me, and in the final version, the nut graph of the story was

> Robert Burns...has collected and interpreted thousands of doodles throughout his career as a clinical psychologist, ranging from doodles by his patients to some by former president Ronald Reagan.

However, when asked to revise one rough draft of my story, Rachel pulled a slightly different idea out of my first draft and wrote this nut graph before she read the final story.

> Doodling reveals feelings in a way language cannot, says Robert Burns, a Seattle writer and clinical psychologist who has been dubbed the "Doodle Doctor."

One other editor used this same information for the headline, which is a good indication that the main idea was buried too far down in the story. The headline-"Oodles of Doodles reveal personality"- exhibits a striking resemblance to Rachel's nut graph. This is just one example of the various mental models of this text and the collaborative nature of journalistic writing.

These differing viewpoints often have to be negotiated as newspapers are written. When writers and editors disagree it is because they have different understandings of traditional news schemata, and they have built different mental models of the text, including different interpretations of the main idea, the structure of the story, and the relevant content. Even though Van dijk (1988) proposes that there are news schemata that journalists use to

pattern stories, those schemata and their translation into text must be continually hammered out (Matalene, 1989). The same is true of a feature story, as writers and editors work through their differing views of its structure and content.

In addition, depending on the leadership styles of editors, a writer may not have total control over a story. In the final version of my story on Burns, my editor added a beginning to my lead to appeal to students, an example of her interpretation of audience and the relevance principle in a feature story.

> **For many students, doodling is a way to pass the time in class, but** for Seattle writer and clinical psychologist Robert Burns, doodling is magic. When he asks his clients to draw, they freeze, Burns says. But when he asks them to doodle, they loosen up and express what they are feeling. (Irby, 1991)

My experience on *The Daily* is representative of revision and editing activities that happen on many publications. Clark and Fry (1992) report that the editor often serves as the coach until twenty minutes before deadline when he must make the final preparations of the copy for publication. Before that, in short sessions coaches and editors are advised to help reporters by asking them questions, offering alternatives, and "bouncing back" the story to the writer. The dialogue between editors and writer, therefore, can take the form of talk and/or written changes in text. The written changes become feedback to the writer and catalyst for further dialogue.

Sometimes this relationship is fraught with disagreement. Anson and Forsberg (1990) followed six interns as they were initiated into writing on the job. Most of them were disillusioned as they had their texts rewritten or criticized by editors. The writers found that they had to modify their concepts to fit the rhetorical assumptions of the community in which they worked. Those assumptions included ideas about the audience of the publication, stylistic interpretations, and the purpose of the text. Several other studies report the challenges of collaborative writing in the workplace (Clark and Doheny-Farina, 1990; Bracewell and Breuleux, 1992; Schriver, 1992). Understanding how the professional thinks, constructs stories, and collaborates within a community provides the foundation for teachers to build an alternative classroom environment and plan teaching strategies.

The Classroom Environment

While some high school journalism programs offer a beginning and advanced journalism class, many must teach students and put out the newspaper in the same class. Even though this scenario can be frustrating, it is much closer to the working environment of the professional journalist than the traditional classroom. Such an environment allows students to operate as a newspaper staff, developing new skills through on-going newspaper activities, and learning journalistic thinking and behavior from fellow students as well as the teacher.

When students enter such a journalism classroom for the first time, they are immediately aware that the newspaper staff structure takes precedence over the traditional classroom structure. They are gradually introduced to the editor, assistant editors, copy editor, etc. as the year progresses with the understanding that each of these experienced students has a role and some authority in the group that operates parallel to the teacher's authority. In addition, the classroom is organized around a production schedule rather than units of study. New students need to be a part of this structure as soon as possible so that they will feel it is their responsibility to model the thinking, behavior and skills of the experienced students. One way to achieve this is to put new and experienced class members with partners or in small groups.

Secondly, learning will be situated in the context of producing the newspaper. The teacher needs to use the stories and activities of the production task to build mini-lessons. Instead of lecturing about journalism, the teacher should lead students in dialogue about the underlying assumptions of the journalism community, thus replicating the thinking process of the professional. In his critique of constructivism, Perkins (1991) warns that the teacher must aid the student in restructuring schema when the cognitive task is complex. In the same way, Minstrell (1989) sees the teacher as someone who helps students restructure their underlying concepts, who works from the students' prior concepts in learning activities, and who moves students to new frameworks. "The act of instruction can be viewed as helping the student unravel individual strands of belief, label them, and then weave them into a fabric of more complete understanding" (Minstrell, 1989).

In the context of a newspaper production classroom, mini-lessons can help students see the concepts that undergird activities. The problems or story assignments that face the staff on a given day can be used by the adviser for lessons that are scheduled into the week's agenda. Based on her knowledge of the previous day's interviewing and writing activities, the teacher could ask a student to present to the class a short summary of a story or photo assignment and its present stage of development. The teacher could then turn that presentation into a discussion that covers an essential concept. For example, if a student is ready to write a story, the class could propose alternate ways to organize the ideas, developing the writer's repertoire of story types or templates.

Some may question the inductive approach rather than direct instruction. Other researchers have discovered that students do not necessarily leave behind old concepts as the new concepts and processes are taught. DiSessa (1982) found that physics instruction in the college classroom did not transfer to a computer simulated problem. When an M.I.T freshman manipulated "dynaturtle" to kick a ball on the computer screen, she struggled with

her "naive perceptions" in the same way that children did, before applying her "formal knowledge."

Even more experienced students may deal with formal classroom knowledge on a superficial basis, thus failing to restructure concepts. A lack of learning in context may lead students to memorize concepts like the elements of news value, but may leave students unable to apply the principles as they collect information and write their stories. They often return to a chronological account of events rather than using order of importance to structure content. Thus, the teacher needs to aid students in the construction of the values and concepts of the profession in the context of producing a newspaper.

As students interact in lessons and in newspaper production activities, they will begin to model the language of the teacher and experienced staff. In her study of how journalists learn, Chin (1991) became aware of the terminology such as "story" and "news peg" that professional journalists use and that her graduate students came gradually to understand and use. In the high school journalism classroom, new students will pick up language and concepts best as they see experienced students use them in newspaper production activities. Another way to reinforce the language of the journalism culture is to expose students to the larger world of journalism through camps, workshops, conventions and collaboration with the local media. Students then take responsibility for feeding back their new learning into the classroom as a part of a community of learners.

Within the context just described students begin to take on a new identity in the school. They no longer come to class as passive learners who read texts, do assignments and take tests. They actively construct their stories, their plans for the publication, and their effect on the school. Chin (1991) described this process in the graduate students she studied. They began to see themselves as journalists rather than students. They budgeted their time to complete classroom assignments efficiently so that they could spend more time on the stories they wanted to sell or complete for their internship assignments. They saw themselves as actors in their environment rather than passive recorders of events. This awareness of the journalism culture happens with high school students given the right interactive environment. Their relationship to the newspaper takes on new meaning as they sense the authority and responsibility that comes with working on the staff.

Within this alternative classroom environment, activity can be more or less fruitful in teaching students to think and behave like journalists, depending on the role of the teacher and the experienced staff and the nature of group discussions. In the next section, I will propose more specific techniques for the journalism teacher to bring about meaningful learning.

Teaching Strategies

Assess Prior Concepts

One of the first priorities for a newspaper adviser in the journalism classroom is training of new recruits. In order to move new journalism students toward the thinking and behavior of journalists, the teacher must assess their present concepts (Minstrell, in press, 1989 and 1982; Carey, 1986; Carpenter, 1989). New students in journalism arrive with preconceived ideas about writing which must be transformed into concepts and processes about writing stories for the newspaper. The teacher can assess the students' prior concepts by proposing news story assignments, discussing approaches, and having students outline steps in the process of writing and researching. In my classroom, beginning students are given a simple news brief to write for the first issue of the newspaper. In class discussion, students could one by one informally share how they would gather the information for the story and what questions they would ask in interviews. The script might go something like this: "Ok, Mary, your story is about recent decisions of the ASB (Associated Student Body). Tell us about the people you would talk to and the questions you would ask. What do you think the reader wants to know?" Feedback from such a discussion would help the teacher assess the students' present understandings of the process. Along the way as students carry out assignments, the teacher can ask the reporters to explain how they are solving their problems and what they are thinking as they complete the process. Once again, the purpose of this questioning is to assess the thinking of students and use that to build lessons. Sample questions: "What is the main idea of your story? What is most important in the story? What problems are you having?" (Clark and Fry, 1992). In addition, as the class progresses, the teacher might ask questions such as, "Does your story fit any of the types of stories we have studied? Do you see an organizational plan yet? What might be one way to organize?" as ways to evaluate developing concepts. These procedures can also be carried out by student editors in large group, small group, or one-on-one format if staff have been trained to mentor new students. This method also teaches students from the beginning that they are in the business of solving problems- problems of research, of journalism constraints, and of pattern recognition.

Use Prior Concepts

Advisers need to consciously focus on students' preconceptions through observation and reflection on classroom interactions. The next step is to plan learning activities that will help students structure and restructure their concepts. The journalism teacher should look for the aspects of the beginning student's understanding that can lead to new concepts.

For example, many beginning journalism students believe that writing means sitting down and recording everything you know about a topic, the more creative, the better.

Bereiter and Scardamalia (1987) call this "knowledge telling" as opposed to the "knowledge transforming" of professional writers. Instead of discouraging this approach teachers can use it to lead into a lesson. Students, after receiving a story assignment, could actually do this writing "off the top of the head" and share their writing in small groups. Quite often they select story assignments related to activities they are in and already have some information about the topic. This beginning could lead to the formulation of questions for interviews and further research, ie. "What information is missing? What else would student readers like to know?" The questioning emphasizes the reporter's responsibility to think through the relationships of the different ideas underlying the story. This will provide a scaffolding for research and later models of the story. The next step after these activities is to help students assess what they learned with broader questions such as, "What does it mean to be a reporter? What are you reporting? How can you use what you already know in your reporting? How is this different from just writing what you know? When is it ok to write what you know? When is it ok to go out and get quotes to support what you already know?"

This practice with the first stories of the year can be taken a step further. Quite often a beginning student's idea of an interview is to write down basic questions involving the "who, what, when, where, why and how" of a story. The idea is to ask the source the questions on the list and write down the answers, with no understanding of the need for open-ended dialogue in interviews. The teacher could use this students' questions and say, "This is how one student has prepared for an interview. Let's try this as a class and see if it works." Next, the teacher would invite someone into class for an interview, preferably a source that a beginning student needs for a story. The class can prepare together using the 5 W's and H to formulate questions. After the group interview, the students could evaluate the information received. "Was it adequate? What else needs to happen? Are there other things the reader would like to know? Does this give you the complete story?" The students could propose a more complex concept of how to conduct an interview after a discussion and evaluation of the ideas. Similar interviews could follow, using the same procedure. Once again the student is learning to build the concepts of news schemata, to build a mental model of the text, and to transform rather than just retell the story.

The teacher should look for opportunities later in the year to illustrate mapping knowledge about a topic before and after an interview, illustrating further how writers use information to build mental models for a story (Geisler, 1991). Another lesson could involve mapping of news schemata from example news stories, using the questions: "What does a news story usually include? What kind of information is in a news story in addition to the 5 w's and the h?" This discussion of the usual elements of a news story would be used to formulate questions for an interview. The elements include: events, episodes, comments and

reactions by sources, background, consequences and context (Van dijk, 1985). Finally, when the students have advanced in their concepts of interviewing, the teacher could ask a professional journalist to come and interview a source in front of the class. Students could write their version of the interview and compare it with the journalist's story. This could be finessed by having the education editor of the local newspaper interview someone from the school whom she needs for a story. The class could also identify the questions that are automatic in an interview and those that come out of the situation and the reporter's constructive thinking process. There are many creative ways that a journalism teacher can use student's present concepts and build new understandings.

Finally, as students move from writing what they know, to transforming information from several sources into a coherent story, they will be ready to consider the issue of "story" which Chin (1991) found in her research. Traditionally the reporter's job was to determine what was important from all the events in the world around them, and record those as accurately as possible. Students need to explore their role in perceiving issues and patterns in events, to understand the relationships and themes in human behavior so that they play an active role in constructing stories, and making connections for the reader. They may discover an idea while interviewing one teacher that contradicts the views of other teachers or students, in the same way that the graduate student contrasted a city councilman's ideas with those of an environmentalist. As students begin to see patterns in the events and opinions around them, they can brain storm together a potential repertoire of story types based on the elements of news value. In the process they begin to identify the hidden "story" within events. An analysis of other school newspapers and the professional media can reinforce this activity so that students can practice the patterns that professionals perceive automatically.

The lessons suggested so far build on assignments for the newspaper. Another way to work in mini-lessons is to play off of the group process. A brainstorming session for the next issue of the newspaper provides a good basis for a discussion of news value. Students come prepared, having covered their beats around school and recorded their own ideas for stories. The editors lead the class in an explanation and categorization of all ideas, and then with whatever time is left, the class evaluates which stories should be assigned, which should be axed, and which should be held for later. The day after this brainstorming session, the teacher leads a discussion on the reasons for the choice of stories. Lampert (1990) reports a technique of labeling ideas with student names - on the overhead or board- thus signaling that these are possibilities but not a group consensus, as yet. The journalism teacher could use the same method, identifying student contributions on the board. From the reasons generated, the teacher could ask the students to come up with the basic principles of what makes information newsworthy or interesting. Hopefully issues of audience and values would emerge along with

debates about recent treatments of events in the news, ie. articles on the sex lives of presidential candidates. As the teacher models the thinking process of journalists, these news concepts will stick because students must construct the ideas as a group in a relevant context.

Take Time for Reflection and Evaluation

Some of the problems encountered by students as they apply concepts are due to the lack of time to assimilate and reflect on complex tasks (Borko and Livingston, 1989). The journalism teacher responsible for helping the learner must be aware of time constraints. If a new student is given too much to do, she may not be able to practice needed routines, to incorporate new understandings, or to be reflective about her work. Students can be asked to be reflective on an individual basis. After studying college freshmen and sophomore writers, Beyer and Graham (1991) strongly recommended that college courses include self-reflective assignments to make students more aware of their writing and learning processes. Students in the study felt that their writing had improved as a result of the self-reflection that was required in student-teacher writing conferences. One student said,

> I never used to think about improving. I'd just write...You ask me these questions, I
> think about how I write and the next time I have to write something, I take that into
> account. I think it's given me a perspective on writing that I didn't have before, that I
> can improve for example. (Beyer and Graham, 1991)

Another method to reinforce the value of reflection in the journalism classroom is a process journal (Perl and Wilson, 1986). Teachers who were trained during a summer writing project in New York used writing process journals for students to study the problems they encountered and procedures and strategies they used in writing during the school year. Some of the teachers used their own writing process journals from the summer workshop as examples for their students. Another tool used by Beyer and Graham (1991) was a reflective essay which required students to choose their best pieces of writing over the course of a year and tell why they judged those to be their best.

The idea of on-going self-reflection and summative self-reflection could be combined in a journalism classroom where new evaluation tools are necessary to go with constructivist approaches. Following up on the teaching of interview skills, the teacher could ask students to keep interview questions and notes or even a tape recording from the beginning of the year and then from later in the year. In place of a final exam, the student could be asked to submit a written comparison of two sets of interviews and their resulting stories, one from the beginning of the year and one from the end of the year or term. The student would be asked to evaluate their work and provide supporting evidence of their learning. These types of assignments place the responsibility on the student to be reflective and to illustrate the development of new concepts.

Address the Group Process

However, these individual assignments do not take the place of reflection on the group process. If beginning and experienced students have been paired for newspaper activities, the group can then discuss and role play the social dimensions of their activities, especially the relationships of writers and editors. The following issues need to be addressed: 1) the differing views of a story- how each student constructs a mental model in their heads, how those models and texts are negotiated; 2) coaching techniques- how to use the computer in modeling and revising stories, how to ask questions to help the writer rethink the story; 3) the roles of writer and editor- who is responsible for the text, at what stage, how are texts negotiated; 4) self-concept vs. text-concept- how does self-concept get mixed up with the text itself, what are some ways to work through feelings as texts are negotiated.

Key players in the picture are the experienced staff members. They must be trained in one-on-one dialogue with students, and they must be sold on the benefits of a more inductive, student-centered approach to learning. One way to do this is to emphasize the importance of learning to think like journalists. One cannot do that by just listening to lectures and presentations or reading texts. Yes, "situations can co-produce knowledge through activity" (Brown,et al, 1989) but only if students take time to think about what they are doing and restructure their schemata. Experienced staff members need to understand these rationales for their mentoring responsibilities. They need to understand that what has become automatic for them needs to be gradually introduced to new staff. They also need to be aware of the mental models that each person builds for a story and the effects of talk on those mental models. Then they will be less likely to leave beginning journalists alone to complete newspaper assignments with inadequate experience and with the tacit assumption that they will learn by doing. Many of these new students get discouraged and drop out. The experienced staff needs to coach these new recruits and to model the reflective process in all group activities.

Working cooperatively as a member of the journalism community is essential to all the other skills a student journalist will learn. If a student does not understand that journalism is always a collaborative process, he will be frustrated.

In summary, journalism teachers need to formulate models of teaching and learning in their classrooms based on what they know about the thinking, behavior, and culture of professional journalists. Research in cognitive psychology and social constructivism provides steps to include in that model. In summary those steps are:

1. Understand the thinking processes of journalists and the collaborative nature of journalistic writing.
2. Create an environment in the classroom that fosters expert-like thinking and group interaction.

3. Implement teaching strategies that assess students' preconceptions and enable students to confront those preconceptions and build new concepts that move them toward expert thinking.

While little research has been done to apply cognitive and social constructivist research to the high school journalism classroom, these suggestions are intended to stimulate interest in doing so.

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