
***SENIOR 4 ENGLISH LANGUAGE ARTS:
LANGUAGE AND TECHNICAL
COMMUNICATION***

*Manitoba Curriculum Framework of Outcomes
and A Foundation for Implementation*

2001

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SUMMARY OF CONTENTS

Introduction: Language and Technical Communication is a Senior 4 English language arts curriculum for optional credit. It is based on the 1994 course of the same name, and has been rewritten as part of a process of curriculum renewal begun in Manitoba a decade ago and reflecting a movement towards student-centred and outcomes-based learning. The purpose of this Framework document is to outline the general and specific learning outcomes around which the Language and Technical Communications course is to be built.

The Introduction sets Language and Technical Communication in the context of English language arts instruction, Kindergarten to Senior 4, and in the context of various language uses—expressive, transactional, and pragmatic. It examines the use of six language arts—listening and speaking, reading and writing, and viewing and representing—in preparing students for effective participation in a technological society.

Senior 4 Optional Curricula Overview: As extensions of the Senior 4 core curricula, the Optional Curricula are designed to foster student independence. In teacher-directed learning experiences, students learn the fundamentals of the course specialization. Major group projects and major individual projects provide students with opportunities to learn through collaboration and through performing authentic tasks in the school or community.

Language and Technical Communication: Technical Communication (TechCom) is defined as a specialized form of transactional communication, characterized by its clarity, precision, and lack of ambiguity, and by its highly formatted forms. TechCom acknowledges the important role that communication plays in technical and professional fields and in the lives of citizens in an information-rich society.

Learning Outcomes: The specific student learning outcomes of TechCom are organized around the five general learning outcomes of the Kindergarten to Senior 4 English language arts curricula.

- **General Learning Outcome 1: Explore thoughts, ideas, feelings, and experiences.** Six specific learning outcomes deal with the exploratory language students use in sharing and developing their ideas, in problem solving, and in experimenting with a range of options.

- **General Learning Outcome 2: Comprehend and respond personally and critically to oral, print, and other media texts.** In attaining the eight specific learning outcomes, students will learn skills and strategies for listening, reading, and viewing technical documents. The preface to General Learning Outcome 2 provides a chart of reading skills.
- **General Learning Outcome 3: Manage ideas and information.** The four specific learning outcomes relate to planning projects and collecting information.
- **General Learning Outcome 4: Enhance the clarity and artistry of communication.** The 11 specific learning outcomes trace the process by which students generate and focus ideas specific to audience, purpose, and context, revise and edit their texts, and present and share.
- **General Learning Outcome 5: Celebrate and build community.** In attaining the seven learning outcomes, students apply collaborative strategies and learn to adapt to various cultural and work contexts.

Teacher-Directed Learning Experiences: In the teacher-directed component of TechCom, students learn to analyze communication situations and shape their communication to the needs and constraints of audience, purpose, and context. They write audience profiles, purpose statements, and explore context: background, time, corporate considerations, resources, and ethics. Ideas are provided for major assignments to consolidate learning.

Major Projects: Teachers can support major projects by creating a risk-taking environment and helping students find and select authentic tasks. Students and teachers work together in managing projects through tools such as project logs and status reports. Assessment is ongoing and may be summarized in sheets such as the samples provided.

Working Collaboratively: TechCom provides students with a theoretical framework for collaboration as well as the opportunity to apply their learning. Teachers support collaboration by ensuring that tasks are interdependent and that students have tools for monitoring and assessing their collaboration.

Appendix A: Ethical Guidelines: These guidelines, from the Society for Technical Communication, are used in a learning strategy described in the Teacher-Directed Learning Experiences.

Appendix B: Learning About Collaboration: These five handouts and teaching strategies support Working Collaboratively.

References

INTRODUCTION

Background

Within the last two decades, English language arts educators have redefined the instruction of English language arts. At all grades, the focus has shifted from reading, writing, and the study of literature to an emphasis on acquiring language and literacy skills through listening, speaking, viewing, and representing, as well as reading and writing. In keeping with the literacy demands placed on them, students now learn to read and produce a wide range of texts. In Senior 3 and 4 they are given the opportunity to specialize in various language uses.

This transformation of English language arts was prompted by social and technological change and by new research in learning. It parallels a general shift in education to learner-centred classrooms, with instruction built around student learning outcomes rather than goals and objectives. Across Canada and much of the Western world, similar changes have resulted in initiatives to create new curricula in many subject areas.

Language and Technical Communication is a realignment of the 1994 curriculum by the same name. It was developed in collaboration with a team of Manitoba teachers.

English Language Arts Curricula

Manitoba Education, Training and Youth provides three core curricula for Senior 4 English language arts:

- Senior 4 English Language Arts: Comprehensive Focus (40S)
- Senior 4 English Language Arts: Literary Focus (40S)
- Senior 4 English Language Arts: Transactional Focus (40S)

To meet the compulsory core Senior 4 English language arts graduation requirements each student (except for students enrolled in a technical program) must complete one of these courses. Students may complete one or two additional courses as optional courses.

To enable Senior 4 students to specialize in a particular area of interest, Manitoba Education, Training and Youth also provides optional curricula that serve as extensions to the Senior 4 core curriculum. These three optional curricula are:

- Language and Technical Communication
- Language and Transactional Forms
- Language and Literary Forms

Students who have completed one or more of the core Senior 4 English courses may enroll in any of these courses as optional credits.

Note: Language and Technical Communication can serve as the sole Senior 4 English Language Arts credit for students enrolled in the Senior Years Technology Education Program.

Purpose of ELA Framework Documents

The ELA Framework documents identify general and specific English language arts learning outcomes for students in Manitoba:

- General student learning outcomes describe the knowledge, skills and strategies, and attitudes students are expected to demonstrate from Kindergarten to Senior 4 and in the Senior 4 optional courses.
- Specific student learning outcomes identify the component knowledge, skills and strategies, and attitudes that contribute to general learning outcomes, and that students are expected to demonstrate by the end of a grade or course.

The general and specific learning outcomes assist educators as they

- set goals for learning
- plan learning experiences that support the achievement of student learning outcomes
- monitor the progress of individual students
- communicate with parents and guardians about student progress
- select learning resources
- establish assessment practices

Language and Language Learning

The Nature and Importance of Language

Learning is a complex process of discovery, collaboration, and inquiry facilitated by language. Composed of interrelated and rule-governed symbol systems, language is a social and human means of representing, exploring, and communicating meaning. Language is a defining feature of culture and an unmistakable mark of personal identity. It is essential to thought and personal expression, to forming interpersonal relationships, and to functioning and contributing within a democratic society. Language is the primary instrument of thought and the primary basis of all communication.

Language Acquisition and Development

Language learning is an active process that begins at birth and continues throughout life. An infant's first words are prompted by an enjoyment of sound and by an intrinsically human impulse to name objects or actions. This language, called "expressive language," is used not primarily to communicate, but to make meaning of experience and to construct a coherent and predictable view of the world. Expressive language is used throughout life, from the "running commentary" of toddlers to the interiorized soliloquy of older children and adults. It is the basis of most conversation, anecdotes, letters, and journals. Expressive language, which Vygotsky (1962) calls "the language of being and becoming," is the means by which people rehearse, shape, interpret, and recall what they perceive and feel.

Britton (1970) observes that language evolves in two directions from purely expressive language:

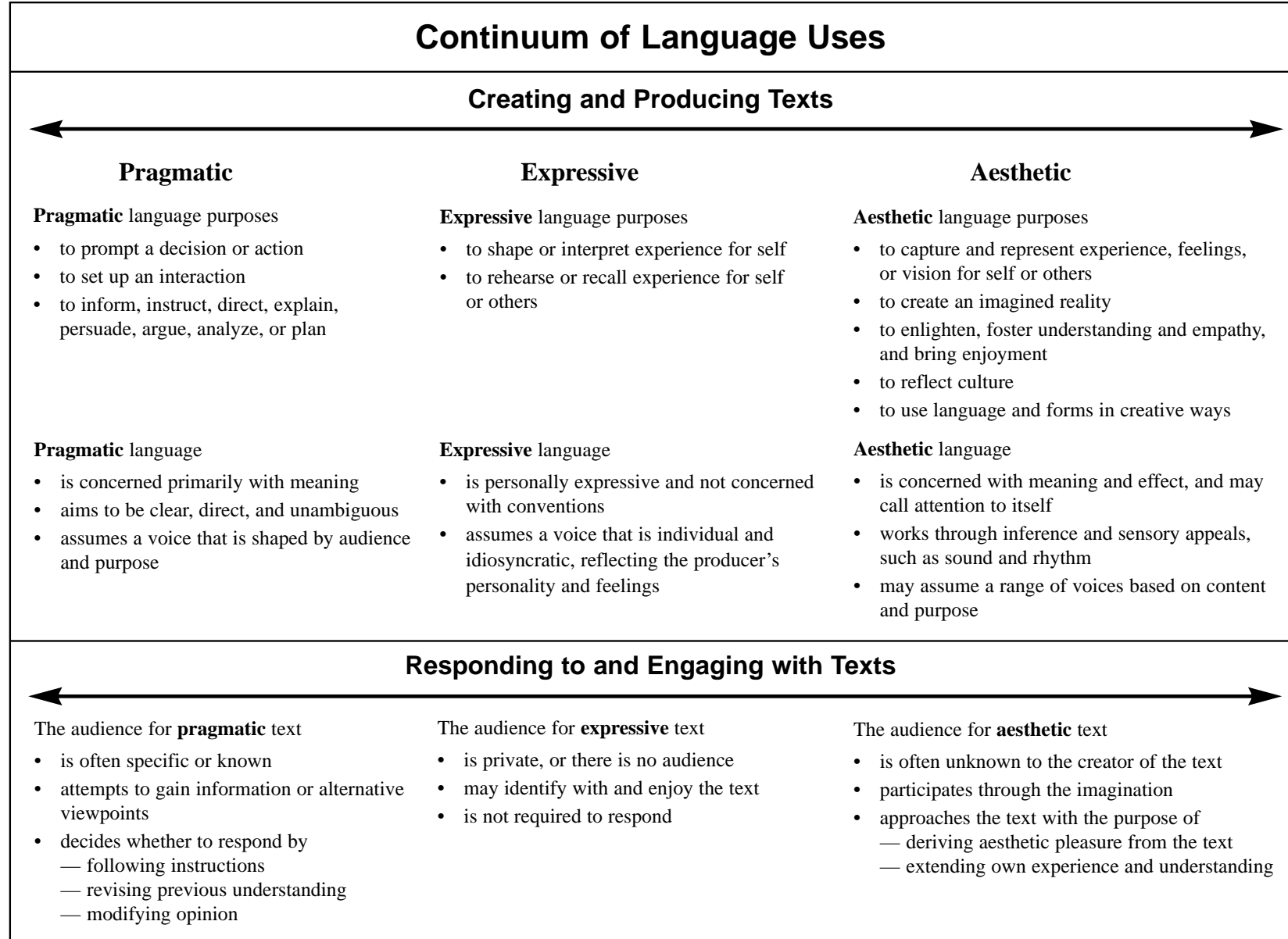
- *Transactional uses of language:* Very early, young children begin to use language to interact with their environment: to gain and exchange information and to make and receive demands and requests. Britton calls this language use transactional language because it requires a response, and may set up a train of interaction. Others call it pragmatic language because it is "the language of getting things done"—language used to inform, to explain, to persuade, to argue, and to plan. Pragmatic or transactional language assumes both formal and informal forms and genres. Technical communication is a particular kind of transactional language.

- *Aesthetic uses of language:* Aesthetic language is expressive language shaped and crafted to capture and represent experiences. It attempts to create and recreate experiences that the audience will enter through the imagination. Poets, filmmakers, illustrators, and playwrights, for example, exploit the meaning, the connotation, and the sensuous properties of language in order to engage the audience, express their vision, and bring aesthetic pleasure.

Language Uses in ELA Learning

English language arts instruction is concerned with all language uses: expressive, pragmatic, and aesthetic. These language uses are not entirely separate; all discourse can be placed on a continuum between purely pragmatic and purely aesthetic language, as shown in the chart that appears on the following page. In one direction, language becomes increasingly pragmatic and increasingly concerned with and shaped by the response of its audience. In the other direction, it becomes increasingly aesthetic, finding ways to evoke or recreate rather than simply to describe experience. Pragmatic use of language in its absolute form (for example, instructions for administering cardiopulmonary resuscitation) aims to be transparent to the broadest audience. Aesthetic use of language in its absolute form (for example, experimental poetry) exploits qualities of language such as sound and pattern, but may invite a variety of different interpretations and responses. Between these extremes, students encounter forms that use language with varying degrees of concern for clarity and for effect. These include texts such as business letters and magazine features produced for pragmatic purposes, and texts such as dramas and novels produced primarily for aesthetic purposes.

Although individual texts cannot be categorized definitively according to their place on the pragmatic-expressive-aesthetic continuum of language uses, the terms “aesthetic texts” and “pragmatic texts” denote texts that appear to be produced for aesthetic or pragmatic purposes. A text, however, may be read for a different purpose than that for which it was produced. A political speech (which has a pragmatic purpose) may be read for the pleasure the reader takes in its language and style, and a magazine advertisement may be examined for its use of poetic language. Similarly, a reader may approach an aesthetic text with a pragmatic purpose, for example, to gather information about the period in which it is set.



Distinguishing between pragmatic and aesthetic uses of language is a way of thinking about the purposes of a speaker, writer, or producer, or an audience, rather than a way of classifying texts. The purposes of the speaker, writer, or producer, as well as the purposes of the audience, contribute to the meaning derived from a text.

The continuum of language uses represented on the previous page describes

- the range of language purposes at play when texts are produced
- the range of language purposes with which audiences may listen to, read, or view texts

Note that an audience may use a text for purposes other than those for which it was produced, and that the audience's purpose may change in the course of listening, viewing, and representing.

Transactional and Technical Language

Transactional language comprises a wide range of forms used to persuade, plan, argue, analyze, inform, and explain. Transactional language is used in fields such as journalism, advertising, travel writing, biography, creative non-fiction, and documentaries.

Technical communication is a form of transactional language—perhaps the purest form, for it sets out to convey information in terms that will have the same meaning to every reader and in language that does not call attention to itself.

The Six English Language Arts

The study of English language arts enables each student to understand and appreciate language and to use it competently and confidently in a variety of situations for communication, personal satisfaction, and learning. Students become competent and confident users of all six language arts through many opportunities to listen, speak, read, write, view, and represent in a variety of combinations and through a wide range of relevant texts.

Instruction in all six language arts equips students for effective participation in a technological society in which information, communication, arts, and entertainment are increasingly conveyed in language forms other than print.

Texts are affected and influenced by how they are transmitted, whether by computer, television, radio, print, or in person. Media texts and electronic texts such as videos, films, cartoons, and electronically distributed magazines frequently include oral, written, and visual components simultaneously. The language arts are clearly interrelated and interdependent. To compose, comprehend, and respond to texts, students need knowledge, skills, and strategies in all six language arts.

The student learning outcomes presented in the Language and Technical Communication Framework integrate the six language arts. In selecting learning resources and in planning instruction and assessment, teachers strive to achieve variety and balance in the use of the six language arts.

Listening and Speaking

Oral language is the foundation of literacy. Through listening and speaking, people communicate thoughts, feelings, experiences, information, and opinions, and learn to understand themselves and others. Oral language carries a community's stories, values, beliefs, and traditions.

Listening and speaking enable students to explore ideas and concepts as well as to understand and organize their experiences and knowledge. They use oral language to learn, solve problems, and reach goals. To become discerning, lifelong learners, students at all grades need to develop fluency and confidence in their oral language knowledge and skills. They benefit from many opportunities to listen and speak both informally and formally for a variety of purposes.

Reading and Writing

Reading and writing are powerful means of communicating and learning. They enable students to extend their knowledge and use of language, increase their understanding of themselves and others, and experience enjoyment and personal satisfaction.

Reading provides students with a means of accessing the ideas, views, and experiences of others. By using effective reading skills and strategies, students construct meaning and develop thoughtful and critical interpretations of a variety of texts. Writing enables students to explore, shape, and clarify their thoughts, and to communicate them to others. By using effective writing strategies, students discover and refine ideas and compose and revise with increasing confidence and skill.

Viewing and Representing

Viewing and representing are integral parts of contemporary life. They allow students to understand the ways in which visual language may be used to convey ideas, values, and beliefs.

Viewing is an active process of attending to and comprehending visual media such as television, advertising images, films, diagrams, symbols, photographs, videos, drama, drawings, sculpture, and paintings. Viewing enables students to acquire information and to appreciate the ideas and experiences of others. Many of the comprehension processes involved in reading print texts (such as previewing, predicting, and making inferences) may also be used in viewing.

In the process of constructing meaning, students represent their ideas through visual forms such as webs, sketches, and maps. Representing enables students to communicate information and ideas through a variety of media, including charts, graphs, diagrams, video presentations, brochures, multimedia technology, visual art, and the dramatic arts.

SENIOR 4 OPTIONAL CURRICULA: OVERVIEW

The Senior 4 English Language Arts optional curricula are curricula intended for students who have fulfilled the compulsory requirements for Senior 4 English Language Arts.

Students entering these courses will bring advanced language skills and skills in working independently and collaboratively. The optional courses provide them with the opportunity to apply those skills in a specialized language area, to develop greater objectivity in dealing with content, and to engage in learning that will help them function effectively and independently after high school—in post-secondary education, community involvement, private pursuits and relationships, and the workplace.

Language and Technical Communication is based on general and specific learning outcomes. In attaining these outcomes, students are expected to engage in a balance of

- teacher-directed, individual, and group learning experiences
- receptive (listening, reading, viewing) and productive (speaking, writing, and representing) language arts

Clarifying the terms

Please note that in this document

- *texts* refers to oral, visual, and electronic texts, as well as written forms
- *reading* refers to making meaning of any kind of text (e.g., listening to a speech, viewing a poster)
- *writing* refers to generating texts, whether they be print, visual, or oral. “Technical writers” is used synonymously with “technical communications experts” in the workplace.

Curricula for the optional courses are designed to foster independence and a gradual release of responsibility from teacher to students. Courses are to be structured around three components, each of which accounts for approximately one-third of the course time and one-third of the final assessment. These components are

- teacher-directed learning experiences
- major group project
- major individual project

Teacher-Directed Learning Experiences

Teacher-directed learning experiences are designed to introduce the fundamentals of the course specialization and to support student work in the major projects. In the teacher-directed component, teachers instruct students in

- conventions of language related to the course specialization
- collaborative processes and strategies (e.g., reaching consensus, collaborative writing, trouble-shooting)
- inquiry process
- problem solving
- a repertoire of forms from which students can draw in completing their projects
- project management strategies and tools (e.g., proposals, learning logs, status reports, timelines)

Major Group and Major Individual Projects

Self-directed major projects are highly rewarding learning experiences that require initiative and commitment from students. These projects offer students the opportunity to deepen and apply their learning in producing a substantial work related to their own interests. They require students to plan, monitor, and appraise their work with minimum guidance from the teacher. The presentations or performances these projects generate may be the culmination of students' high school experience.

The major group and major individual projects may be inter-related but are not necessarily so. Each project should be more than a simple collection of inter-related short assignments. It should

- allow for an on-going process of formative and summative assessment of the learning outcomes

- require students to conduct in-depth inquiries into primary and/or secondary sources
- require students to produce authentic forms related to the course specialization
- require students to use several of the language arts in preparation and presentation
- culminate in a presentation or performance for an audience in the school or community
- explore a worthwhile topic or perform a task that meets a need in the school or community
- allow students to explore a topic that is personally meaningful to them and that may reflect their goals and plans for the future

Assessment

The specific learning outcomes for the optional courses provide direction and focus for student learning. Teachers are responsible for summative assessment, but this assessment will take into account information about student learning collected from a variety of sources in the context of the teacher-directed learning experiences and the major projects.

Although projects will vary widely in purpose, subject, and form, teachers can establish clear general expectations based on the learning outcomes. Teachers are encouraged to use a variety of tools for formal and informal assessment at various stages of the projects, and to involve various individuals, including

- students (self- and peer-assessment)
- other instructors with expertise in the course specialization or the students' chosen topic
- the public (e.g., client or audience feedback)
- the teacher

Course Organization

The teacher and students will decide how best to interweave the three course components throughout the year or semester. Course organization will vary from year to year as students take advantage of opportunities for authentic projects within the school and community.

Teachers may wish to organize the teacher-directed learning experiences around

- a course introduction with short assignments to help students develop the mindset of the course specialization
- a whole-class project that requires students to apply project development and management strategies in preparation for their major projects
- mini-lessons throughout the course in the context of major projects so that students can immediately apply their learning

Student Independence and Student Learning

As well as fostering language learning in a specialized area, the optional courses, by their structure, provide opportunities for students to develop reflective skills and to gain understanding about their own learning processes.

Students in the optional courses develop metacognition through

- *selecting and planning their own projects:* Students use critical-reflective skills in selecting the most effective forms and strategies for various situations. In negotiating their projects with the teacher and other group members, they explore their own interests and values.
- *working in groups:* Collaboration provides students with information about themselves they would never gain working individually. Students may be asked to complete inventories of multiple intelligences and learning styles and to reflect on the skill set they bring to group projects. Suggest that groups explore ways to organize responsibilities so that members can contribute to projects on the basis of their strengths. Discussing their expectations regarding the process the group will follow may help students understand, respect, and accommodate different contributions and work styles, and can reduce conflict as projects proceed.
- *performing authentic tasks in the community:* The authentic nature of student projects allows students to experience themselves in new contexts. In contacting or collaborating with members of community organizations, students learn to adapt their language and behaviour to various professional and cultural contexts.

LANGUAGE AND TECHNICAL COMMUNICATION

Language and Technical Communication is designed to meet the needs of all Senior 4 students, no matter what profession or career they intend to pursue. It recognizes that all individuals in an information-rich society are called upon to deal with technical texts in the course of their daily lives, and that almost all careers and professions require employees to be skilled communicators. The importance of communication in technical and professional fields has been borne out by research. Anderson (1985) found that technical professionals can expect to spend at least a fifth of their time writing, Beer and McMurrey (1997) that engineers devote 40% of their time to writing. A study undertaken at MIT (1984) observed that the percentage of time spent writing increases as people advance from supervisor to manager.

Our students will enter a rapidly-evolving job market, and need personal communication skills they can apply in various work situations. They need expert communication skills in part because of the rapid evolution of technology:

- Jobs are increasingly specialized and employees need to communicate with other areas in their organization or industry.
- Professionals increasingly write their own letters and memos rather than using secretarial services.
- Professionals are often responsible for formatting and designing their own documents with the help of publications software.
- The ease with which information can be transmitted electronically means that communications are shared with wider audiences.

Language and Technical Communication (hereafter referred to as TechCom) is designed to help students process and manage technical information and produce readable, useful documents. It will enhance students' problem solving and collaborative skills. Students may apply their learning in technical communication as

- *citizens*: Citizens in a complex technological society are called upon to read a myriad of technical documents in conducting their daily affairs. They fill out forms, learn regulations, and interpret handbooks and owner's manuals.

- *students*: Students need technical skills to read texts and write reports in other Senior 4 courses, community college, university, and trade or apprenticeship programs.
- *technicians and professionals*: Workers such as engineers, welders, nurses, entrepreneurs, managers, geologists, and urban planners use technical communication to document information for in-house purposes and to communicate with other organizations or with the public.
- *career technical writers*: Some students may enter the growing field of technical communications, producing text books, owner's manuals, journal articles, speeches, and project reports.

Defining Technical Communication

What is Technical Communication?

- It is a form of transactional communication.
- It performs a specific purpose for a particular audience.
- It deals with specialized areas, often technical in nature.
- It often furthers the interests of organizations rather than individuals.

Technical communication is the most pragmatic of all language forms. It is transactional communication that deals with specialized areas. Often these are knowledge systems that have their own vocabulary. Much of what we call “technical communication” is communication that furthers the purposes of organizations rather than individuals. Technical communication is used for a range of purposes and kinds of representation, including

- *business*: correspondence, persuasive documents related to equipment purchases, promotion of new products
- *administrative*: reports, policy statements
- *educational*: user manuals, pamphlets, handbooks
- *artistic*: sheet music, storyboard, directors' script, choreography notation
- *academic*: research reports, articles for professional publications
- *technical*: blueprints, technical specifications

Technical communication performs a specific purpose for a particular audience. Whereas journalism and advertising may develop profiles of their typical audience member or their demographic target, technical communicators address an identified reader, and all of the elements of the communication are shaped by the needs and characteristics of this reader.

Because it is hyper-conscious of audience and purpose, technical language is

- *unambiguous and accessible*: it aims to convey the same meaning to all readers
- *transparent*: it uses language that conveys meaning most efficiently without calling attention to its artistry
- *inventive*: its form and medium are determined by its purpose and the needs of its audience rather than by the conventions of form
- *rapidly evolving*: technical language evolves with changing technology and communication contexts

Technical writers use design and formatting that will communicate in the most clear, concise terms possible. Technical documents are characterized by

- headings and short text segments
- lists
- graphics: graphs, photographs, diagrams, tables, maps
- white space

Key Features of Technical Language

The style and diction of contemporary technical communication is in sharp contrast to business English of the 1940s and 1950s, which was characterized by euphemism and formality. Technical communication is fresh, concise, and concrete, and all language choices are shaped by considerations of purpose, audience, and context.

Voice: Technical writers represent the organization for which they are employed. This does not mean that all traces of humour and personality are effaced, but that the voice writers use is the voice that will best further and represent the purposes of that organization. Voice is a device, rather than an expression of their own personality; in fact, many of the documents technical writers produce have collaborative authorship. The voice chosen will vary depending on the size of the audience, the writer's relationship to that audience, and the purpose.

Diction: Technical communication is characterized by

- *conciseness:* It avoids low content phrases (“It should be noted that”) and redundancy (“in order to” instead of “to”).
- *clarity:* It uses terms that require as little inference as possible.
- *precision:* It uses neutral descriptors rather than judgement words, and specific vocabulary (including jargon) appropriate to the knowledge level of the audience.

Forms, Media, and Organizational Patterns: In technical communication, form, medium, and organizational pattern are determined by the parameters of purpose, audience, and context. Rather than assigning specific forms and media, ask students to make decisions based on their purpose and audience profile.

Technical forms are characterized by

- *unconventionality:* The organization and sections of a proposal or report will vary from one situation to the next.
- *explicitness:* Technical documents use overt and immediate statements of intention rather than climactic structure.

Examples of Forms Used for Technical Purposes	
abstract agenda ballot bibliography blueprint business forms contract demonstration diagram email executive summary glossary graph, chart handbook hypertext index instructions job description letter: complaint, request, application manual map	memo minutes mission statement music and choreography notation models newsletter oral presentation pamphlet poster presentation software professional code proposal report: accident, project, status speech: formal, impromptu, extemporaneous storyboard survey and questionnaire table telephone conversation visual aid web page

Examples of Media	
CD e-book email fax network messaging overhead transparency	phone PowerPoint smartboards software applications video visual aid

Examples of Organizational Patterns	
cause-and-effect chronological comparison-contrast diamond general to specific	more important to less important problem solution pyramid specific to general

LEARNING OUTCOMES

The specific learning outcomes are concise statements of the learning students are expected to demonstrate by the end of the TechCom course. This learning is made up of:

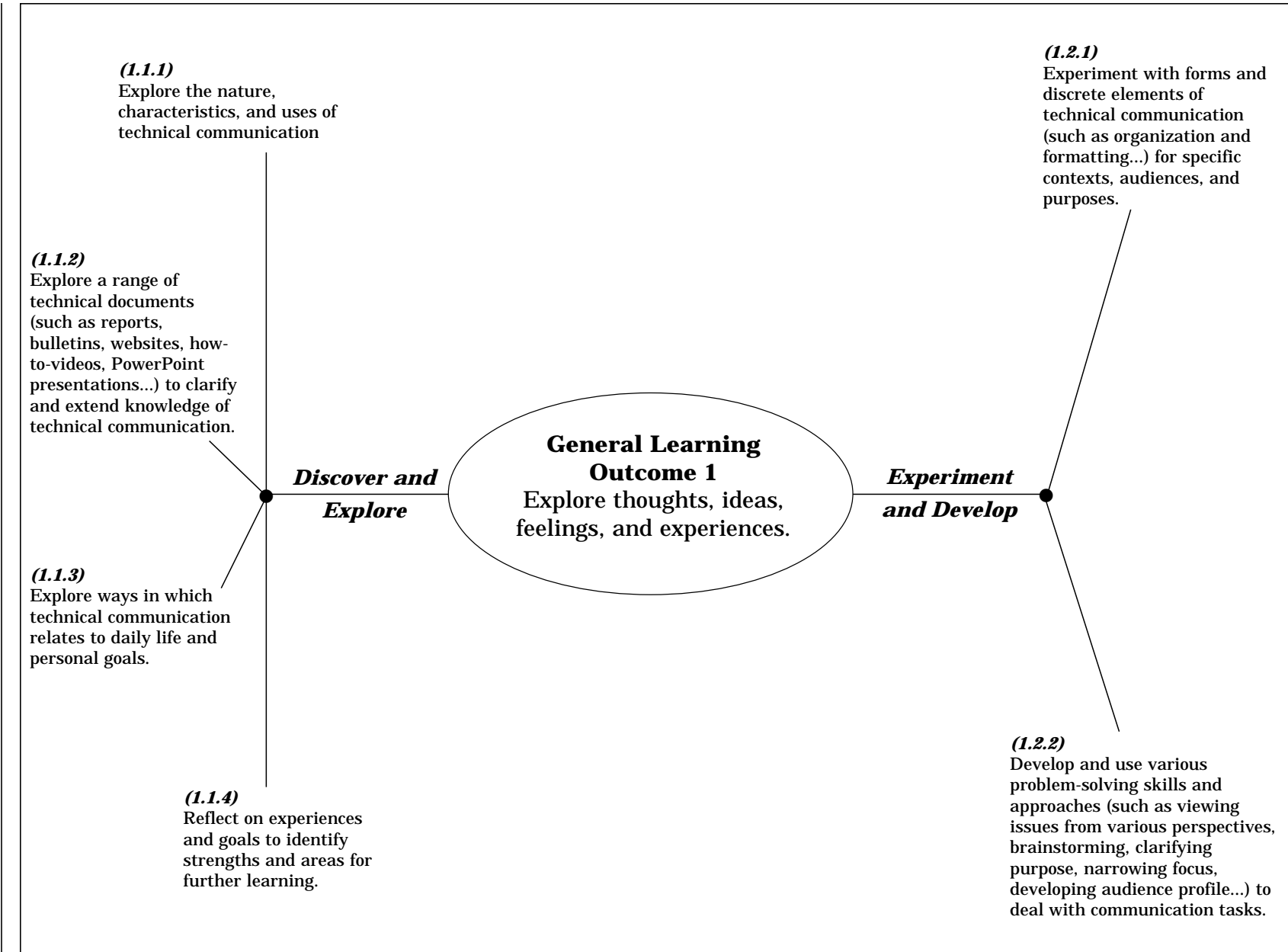
- *Knowledge:* The declarative knowledge of TechCom includes knowledge of the elements of technical communication, the elements of design, forms, organizational structures, sources of information, cultural conventions, and stages in the development of learning groups.
- *Skills and Strategies:* The procedural knowledge of TechCom includes reading strategies, collaborative processes, revision and editing, reflection, problem solving, time management, analytical and critical thinking, and metacognition.
- *Attitudes:* Attitudes and habits of mind fostered in TechCom include thinking strategically, openness to others' ideas, co-operativeness, persistence, risk-taking, task commitment, willingness to accept responsibility, and willingness to modify behaviour in various contexts.

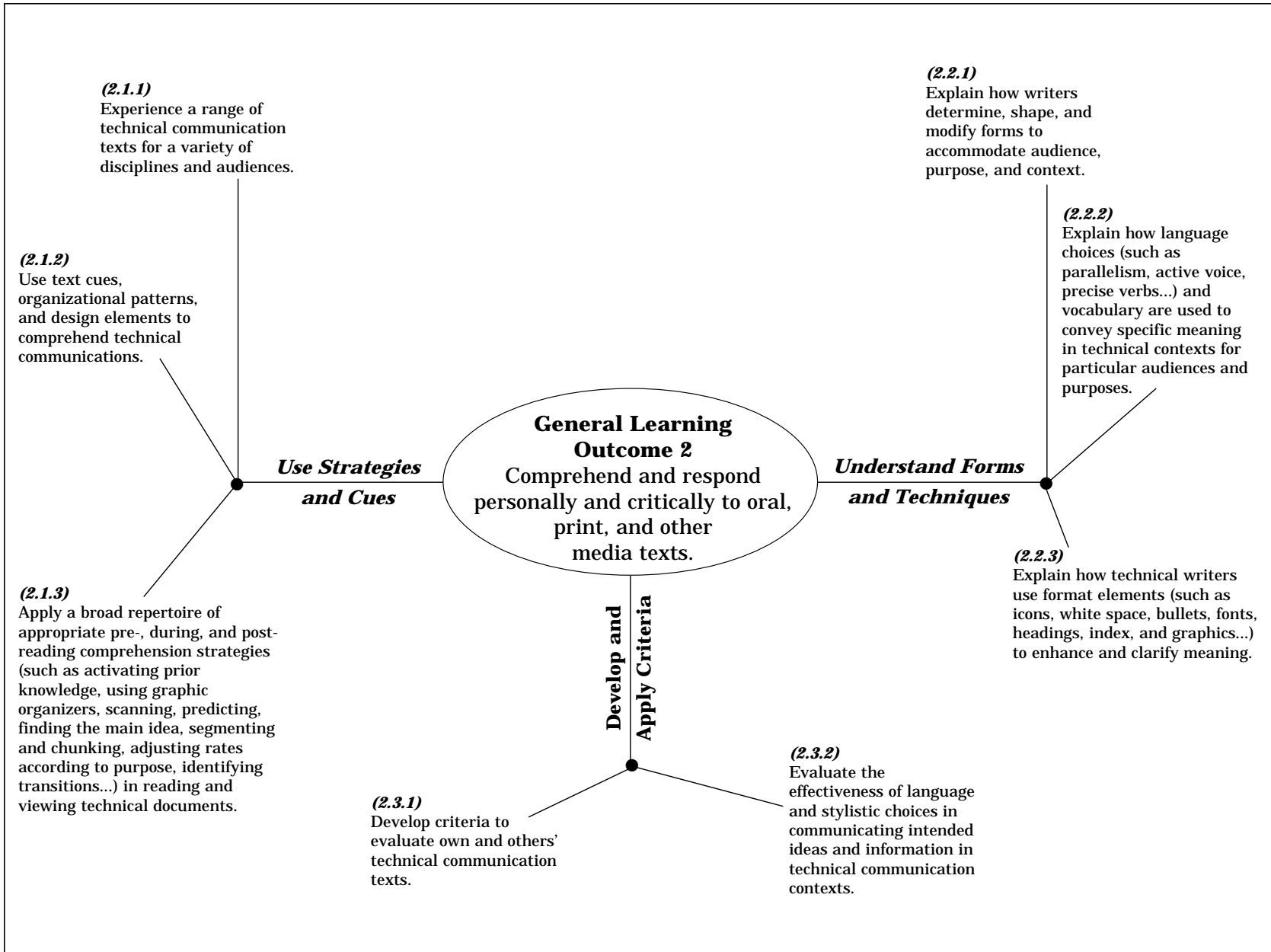
The specific learning outcomes for TechCom are organized around the five general learning outcomes of the English Language Arts curriculum. All language learning is dynamic and recursive. Rather than addressing the learning outcomes in this curriculum sequentially,

- draw specific learning outcomes into logical combinations for instruction
- assess a handful of specific learning outcomes in connection with each learning experience
- address each learning outcome several times in various contexts until students have mastered it

Many specific learning outcomes provide examples:

- Examples prefaced by *such as* indicate the range and variety of examples teachers need to consider in their planning.
- Terms prefaced by *including* indicate mandatory aspects of curricula.





General Learning Outcome 3
Manage ideas and information.

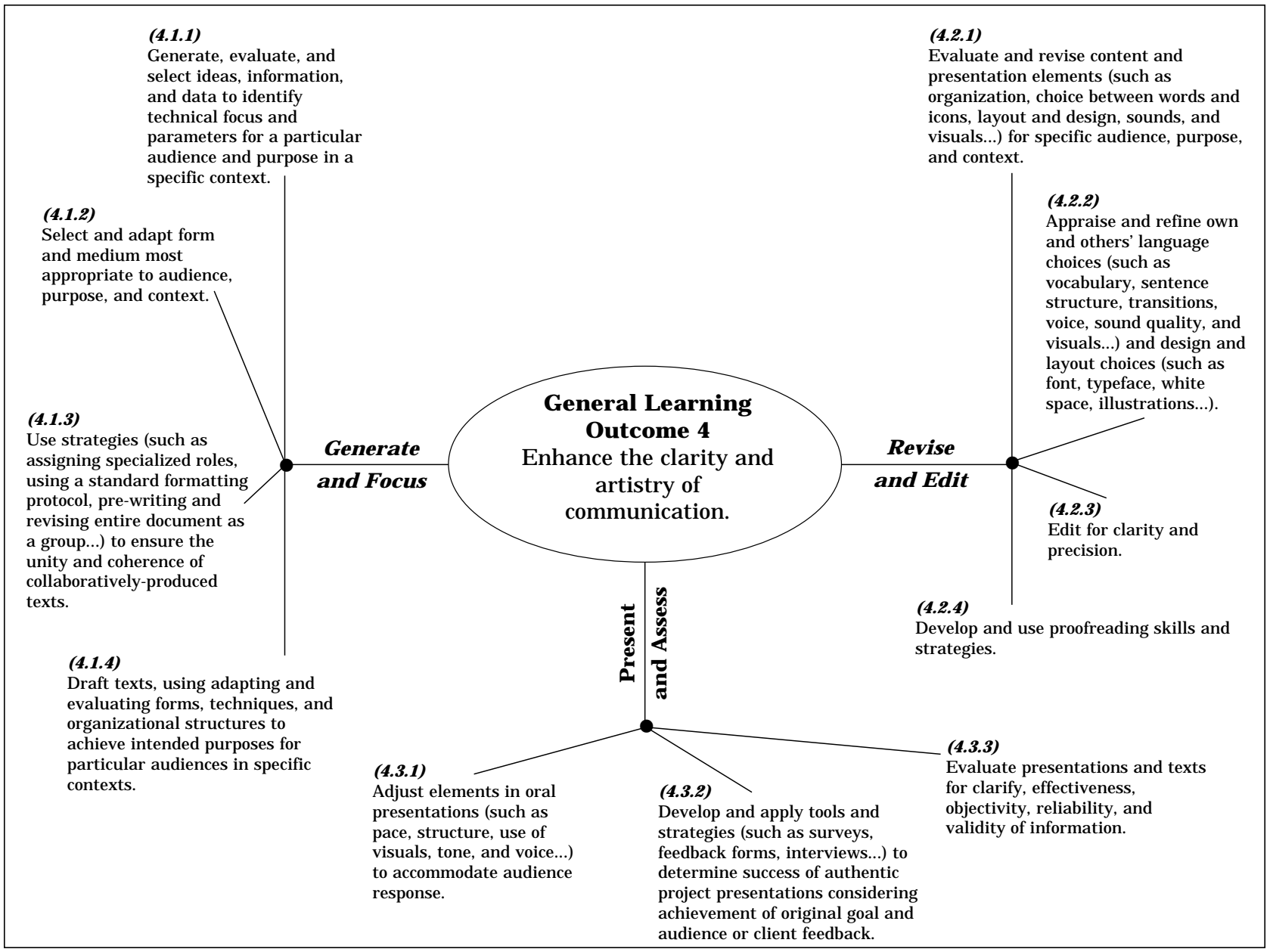
Plan and Gather Information

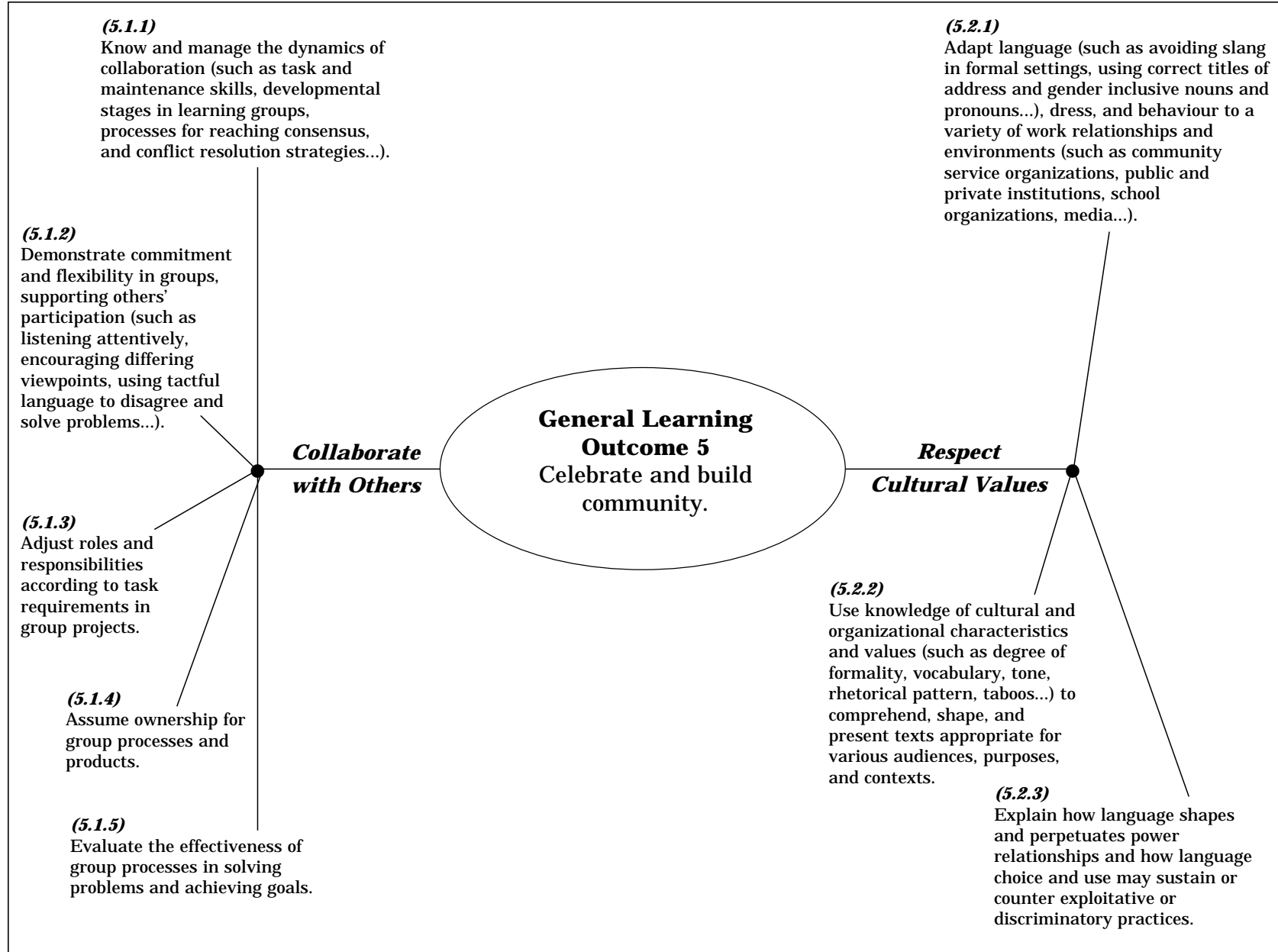
(3.1.1)
Identify purpose and parameters of task, including definition of problem, intended audience, and time frame.

(3.1.2)
Develop project plan, including data gathering methods, rationale, audience profile, group member responsibilities, criteria for success, project stages, and timelines.

(3.1.3)
Follow plan, including identifying sources of information and conducting research, monitoring and reporting on progress, meeting timelines, and modifying plan as necessary.

(3.1.4)
Evaluate, record, document, and organize information, determining significance, accuracy, completeness, and relevance to audience and purpose.





General Learning Outcome 1

Students will listen, speak, read, write, view, and represent to explore thoughts, ideas, feelings, and experiences.

Exploratory language, which is largely spontaneous, is a major learning strategy, enabling students to discover and clarify their thoughts and ideas by giving them voice and by comparing them to the ideas of others. Students use exploratory language, for example, in developing and enlarging their understanding of what technical communication is.

Exploratory language is characterized by tentativeness. It is used at every stage of a learning experience as students

- explore the needs and characteristics of various audiences
- examine a range of possibilities for meeting communications needs
- implement problem-solving strategies such as viewing issues from various perspectives
- identify their personal and ethical limits in various work situations

Discover and Explore

- 1.1.1 Explore the nature, characteristics, and uses of technical communication.
- 1.1.2 Explore a range of technical documents (such as reports, bulletins, websites, how-to-videos, PowerPoint presentations . . .) to clarify and extend knowledge of technical communication.
- 1.1.3 Explore ways in which technical communication relates to daily life and personal goals.
- 1.1.4 Reflect on experiences and goals to identify strengths and areas for further learning.

Experiment and Develop

- 1.2.1 Experiment with forms and discrete elements of technical communication (such as organization and formatting. . .) for specific contexts, audiences, and purposes.
- 1.2.2 Develop and use various problem-solving skills and approaches (such as viewing issues from various perspectives, brainstorming, clarifying purpose, narrowing focus, developing audience profile. . .) to deal with communications tasks.

General Learning Outcome 2

Students will listen, speak, read, write, view, and represent to comprehend and respond personally and critically to oral, print, and other media texts.

Individuals in a technological society face a flood of technical information daily in their jobs, their studies, and their private lives. These documents include handbooks, manuals, forms, and textbooks. In order to deal effectively with technical documents, students need particular reading strategies. Because readers come to technical texts with a specific purpose, their reading is a problem-solving activity.

General Learning Outcome 2 addresses the skills students use in listening to, reading, and viewing technical documents. The language used in technical documents invites a narrower range of responses and interpretations than other texts, but readers are still engaged in the process of making meaning. Students draw on skills used in reading all transactional documents:

- assessing the clarity of exposition, the logic of arguments, the validity of proof, and the power of persuasive devices
- assessing the effectiveness of various forms and organizational structures
- recognizing the ways in which forms, genres, and techniques are determined by purpose, audience, and context
- recognizing that the medium of communication shapes its meaning

Both technical readers and technical documents, however, have certain unique characteristics. Technical readers come to a text with a clearly identified purpose, and read only the parts of a text that address that purpose. Technical documents accommodate readers by making the purpose of each section explicit through headings and through immediate statements of purpose. Technical documents can be thought of as modular. They may, in fact, be collections of discrete parts for various audiences and by various writers. Technical readers move back and forth between various sections in a reading process that is selective and recursive rather than linear.

Because of the unique characteristics of technical readers and technical documents, certain reading strategies need to be stressed in TechCom. The chart below summarizes the skills adept technical readers use before, during, and after reading a text.

Reading for Technical Purposes

Readers approach reading as a problem-solving act to gain information.

Before reading, effective readers

- reflect on what they already know about the subject and identify a purpose for reading
- mentally pose questions they expect the text will answer
- determine the purpose of the text and its intended audience

During reading, effective readers

- look over the text to identify its parameters, noting pertinent sections, headings, illustrations, sidebars, etc.
- set their reading rate (scan, skim, or scour) depending on the length of the text, the time available, and the purpose for reading
- make a mental construct of the information they are reading, integrating it with what they already know about the subject; read to confirm or revise their hypotheses about the subject
- look for cues regarding the structure of the text (especially formatting) and make judgements about which concepts are central and which are supporting; note connection between text and graphics
- use context to infer the meaning of unknown words; refer to glossary as necessary
- monitor comprehension, referring back to previous sections if meaning becomes unclear
- vary their reading rate according to the importance, relevance, and difficulty of passages in the text. They “sample” the text, making meaning from the fewest possible number of cues.

After reading, effective readers

- assess text for accuracy, credibility, logic
- select important information and record it in a form that requires them to structure the concepts as they have understood them
- reflect on the way this information revises their understanding of the subject, and what action they will take
- pose new questions

Much of student reading in the TechCom is for the purpose of learning how various technical forms work. The forms students produce will in many cases be based on models they examine. For this reason, General Learning Outcome 2 is closely tied to the production of texts in General Learning Outcome 4.

Use Strategies and Cues

- 2.1.1 Experience a range of technical communication texts for a variety of disciplines and audiences.
- 2.1.2 Use text cues, organizational patterns, and design elements to comprehend technical communications.
- 2.1.3 Apply a broad repertoire of appropriate pre-, during, and post-reading comprehension strategies (such as activating prior knowledge, using graphic organizers, scanning, predicting, finding the main idea, segmenting and chunking, adjusting rates according to purpose, identifying transitions . . .) in reading and viewing technical documents.

Understand Forms and Techniques

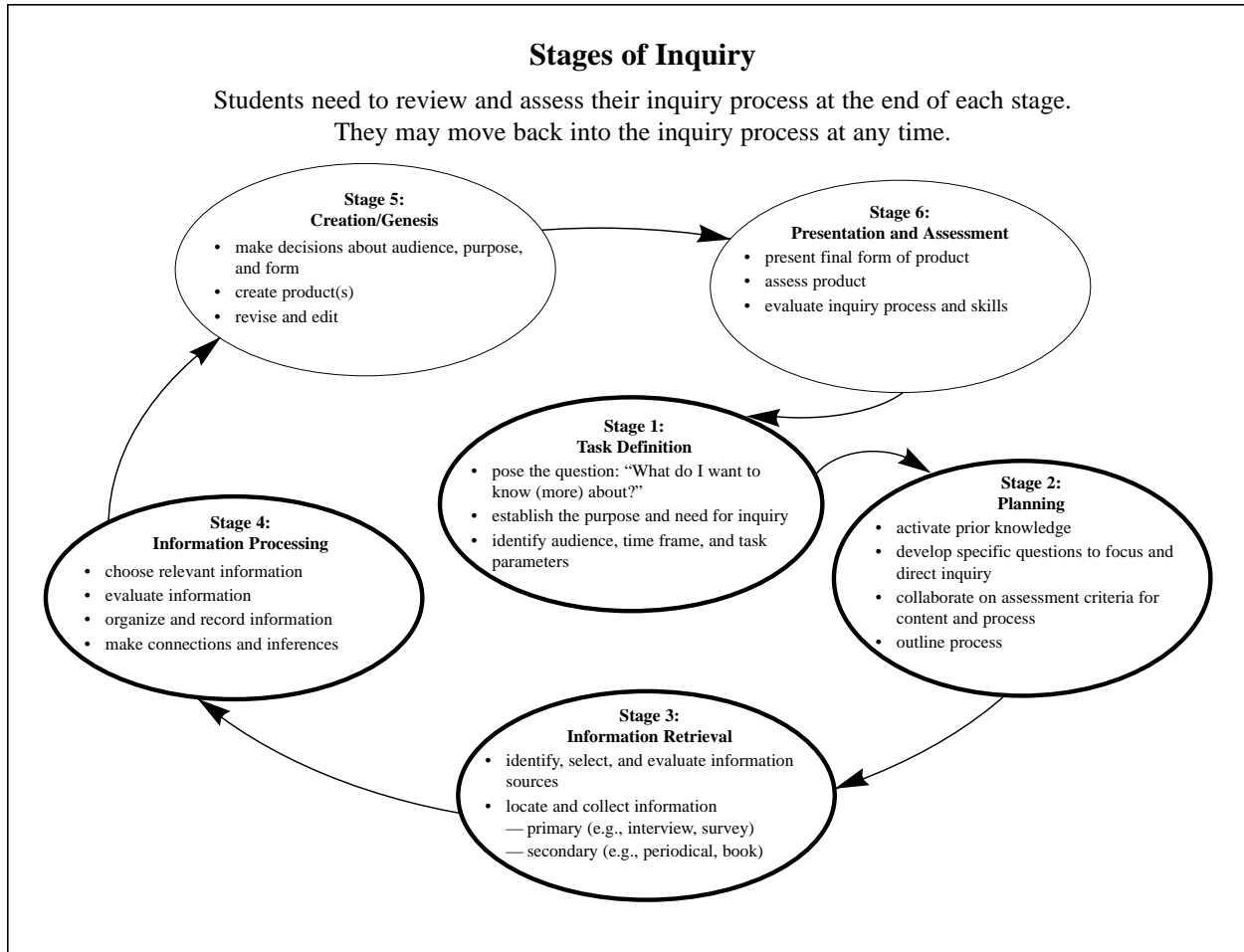
- 2.2.1 Explain how writers determine, shape, and modify forms to accommodate audience, purpose, and context.
- 2.2.2 Explain how language choices (such as parallelism, active voice, precise verbs . . .) and vocabulary are used to convey specific meaning in technical contexts for particular audiences and purposes.
- 2.2.3 Explain how technical writers use format elements (such as icons, white space, bullets, fonts, headings, index, and graphics . . .) to enhance and clarify meaning.

Develop and Apply Criteria

- 2.3.1 Develop criteria to evaluate own and others' technical communication texts.
- 2.3.2 Evaluate the effectiveness of language and stylistic choices in communicating intended ideas and information in technical communication contexts.

General Learning Outcome 3

Students will listen, speak, read, write, view, and represent to manage ideas and information.



The learning outcomes in General Learning Outcome 3 comprise the first four stages of the inquiry process represented in the above diagram. General Learning Outcome 4 treats the last two stages.

The major projects in TechCom require students to take increasing responsibility for establishing expectations, setting direction, pacing projects, and adhering to timelines. The inquiry and research conducted by students in the TechCom is shaped by the particular nature of technical communication. For example,

- projects will frequently be authentic tasks and proposals may be externally assessed

- the questions that guide the project will be specific questions, prompted by the purpose of the project and the needs of the audience rather than by the curiosity and personal interests of the students
- the research students conduct is frequently primary. Students will design and conduct surveys and interviews to gather data pertinent to their project
- processing information entails recognizing patterns, establishing categories, and stripping away extraneous information

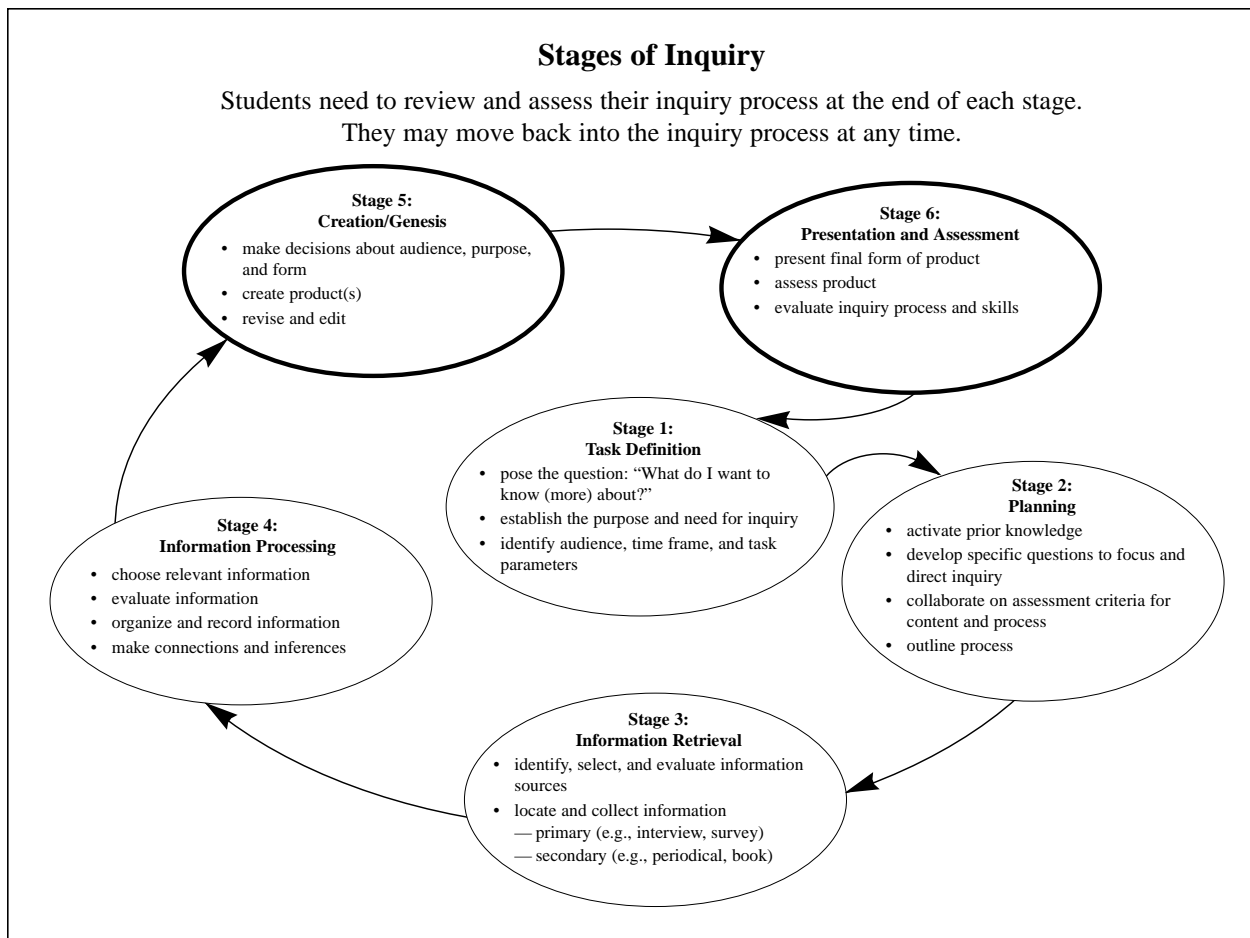
Plan and Gather Information

- 3.1.1 Identify purpose and parameters of task, including definition of problem, intended audience, and time frame.
- 3.1.2 Develop project plan, including data gathering methods, rationale, audience profile, group member responsibilities, criteria for success, project stages, and timelines.
- 3.1.3 Follow plan, including identifying sources of information and conducting research, monitoring and reporting on progress, meeting time lines, and modifying plan as necessary.
- 3.1.4 Evaluate, record, document, and organize information, determining significance, accuracy, completeness, and relevance to audience and purpose.

General Learning Outcome 4

Students will listen, speak, read, write, view, and represent to enhance the clarity and artistry of communication.

General Learning Outcome 4 traces the processes by which students generate and focus their ideas, work with others in enhancing and clarifying the texts they produce, and share what they have created. In the context of student projects, it is the continuation of the process outlined in General Learning Outcome 3.



General Learning Outcome 4 is also closely linked to General Learning Outcome 2. Student writing is often based on models that students examine, and allows students to experiment with forms and with elements of technical communication observed in their reading.

Because the requirements of audience, purpose, and context are paramount considerations in technical communication, revision is largely a matter of holding drafts up to these determinants. In revising various aspects of a draft, students ask questions such as the following:

- *Contents:* Have I answered the questions my readers are likely to ask? If my purpose is personal, have I presented a compelling case?
- *Organization:* Is information provided in the order that is most convenient for my readers? Do I signal transitions from one point to the next?
- *Diction:* Is my vocabulary consistent with my readers' level of knowledge? Is my language clear and concise? Do I avoid jargon unless it is the most effective way of communicating with a specialized audience?
- *Tone and language register:* Do my tone and register reflect my relationship with the audience and the context of this communication?
- *Formatting and design:* Is the design of this document appropriate for this audience and this context?

Note that in the context of technical communication, *artistry* refers to language that is clear, concise, and fresh. Students will edit their work for conventions such as

- active voice
- parallel structure in bulleted lists
- subordination of less important ideas
- white space

Students need to demonstrate their skill in making design choices rather than simply using standard templates available in design software.

In producing professional products for real audiences, students may have their work proofread by an outside proofreader, and will learn to perform the proofreading role for others in the class.

The real audience and authentic purposes and contexts of many technical communications projects mean that students may have the opportunity to seek feedback from their audience or from clients for whom they have worked, and to use this feedback to determine whether their communication has accomplished its purpose.

Generate and Focus

- 4.1.1 Generate, evaluate, and select ideas, information, and data to identify technical focus and parameters for a particular audience and purpose in a specific context.
- 4.1.2 Select and adapt form and medium most appropriate to audience, purpose, and context.
- 4.1.3 Use strategies (such as assigning specialized roles, using a standard formatting protocol, pre-writing and revising entire document as a group. . .) to ensure the unity and coherence of collaboratively produced texts.
- 4.1.4 Draft texts, using, adapting, and evaluating forms, techniques, and organizational structures to achieve intended purposes for particular audiences in specific contexts.

Revise and Edit

- 4.2.1 Evaluate and revise content and presentation elements (such as organization, choice between words and icons, layout and design, sounds, and visuals . . .) for specific audience, purpose, and context.
- 4.2.2 Appraise and refine own and others' language choices (such as vocabulary, sentence structure, transitions, voice, sound quality, and visuals . . .) and design and layout choices (such as font, typeface, white space, illustrations . . .).
- 4.2.3 Edit for clarity and precision.
- 4.2.4 Develop and use proofreading skills and strategies.

Present and Assess

- 4.3.1 Adjust elements in oral presentations (such as pace, structure, use of visuals, tone, and voice. . .) to accommodate audience response.
- 4.3.2 Develop and apply tools and strategies (such as surveys, feedback forms, interviews. . .) to determine success of authentic project presentations considering achievement of original goal and audience or client feedback.
- 4.3.3 Evaluate presentations and texts for clarity, effectiveness, objectivity, reliability, and validity of information.

General Learning Outcome 5

Students will listen, speak, read, write, view, and represent to celebrate and build community.

In TechCom, celebrating and building community is expressed through purposefully applying collaborative strategies in accomplishing authentic tasks. Knowledge of collaborative processes and development of collaborative skills are vital to students' future success, both in the workplace, in community activities, and in personal relationships. Due to the complexity of information-based occupations, workplaces are increasingly interdependent, and group projects play an important role in preparing students for the demands of future employment. Collaboration provides students with immediate feedback about their ideas, and helps students develop the objectivity that is important in adult work places. Working with individuals from the community on authentic projects is a valuable extension of the collaborative process.

In multicultural communities and international business situations, students need to be aware that various cultures have diverse expectations for the tone, degree of formality, rhetorical patterns, and vocabulary used in business and technical communications. Students will also explore the role that language plays in expressing organizational hierarchies and power relationships.

Collaborate with Others

- 5.1.1 Know and manage the dynamics of collaboration (such as task and maintenance skills, developmental stages in learning groups, processes for reaching consensus, and conflict resolution strategies. . .).
- 5.1.2 Demonstrate commitment and flexibility in groups, supporting others' participation (such as listening attentively, encouraging differing viewpoints, using tactful language to disagree and solve problems . . .).
- 5.1.3 Adjust roles and responsibilities according to task requirements in group projects.
- 5.1.4 Assume ownership for group processes and products.
- 5.1.5 Evaluate the effectiveness of group processes in solving problems and achieving goals.

Respect Cultural Values

- 5.2.1 Adapt language (such as avoiding slang in formal settings, using correct titles of address and gender inclusive nouns and pronouns . . .), dress, and behaviour to a variety of work relationships and environments (such as community service organizations, public and private institutions, school organizations, media . . .).
- 5.2.2 Use knowledge of cultural and organizational characteristics and values (such as degree of formality, vocabulary, tone, rhetorical pattern, taboos . . .) to comprehend, shape, and present texts appropriate for various audiences, purposes, and contexts.
- 5.2.3 Explain how language shapes and perpetuates power relationships and how language choice and use may sustain or counter exploitative or discriminatory practices.

TEACHER-DIRECTED LEARNING EXPERIENCES

Students entering TechCom frequently bring very little explicit prior knowledge of what technical communication is. The teacher-directed component of the course is an opportunity to establish a foundation on which student learning will be based, exploring the goals, concerns, and elements that make technical communication unique.

Wherever possible, provide learning experiences that allow students to apply concepts and practice strategies immediately. When authentic tasks cannot be found, teachers can add authenticity to assignments by using real-world problems and situations (cases) in instruction, and by using simulations and in-class experiments to generate content.

Sample Learning Experience: What is the technical way of describing something?

Place a chair or other object on a desk at the front of the room and ask students to try out different ways of describing it.

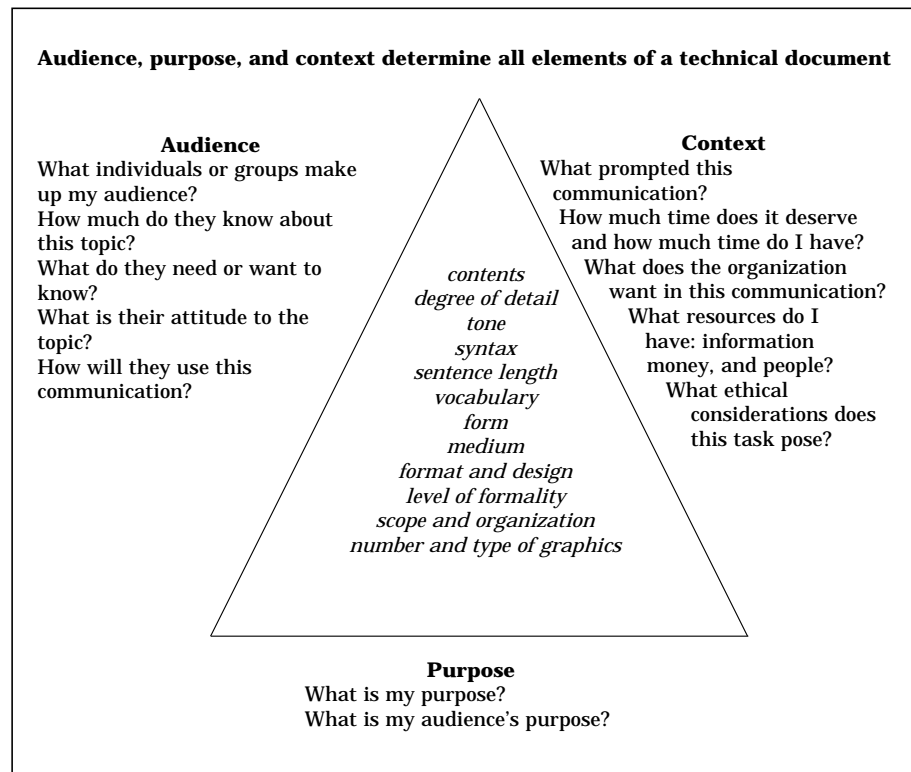
- How might a poet describe this object?
- How might an advertiser?
- How might a technical writer?

As student knowledge of the elements of technical communication deepens, return to this exercise, asking, for example, how a technical writer might describe the object for various purposes (e.g., assembling it, recommending its purchase) and for various audiences.

Analyzing the Communication Situation

All communication is shaped to some degree by the needs and limitations of audience, purpose, and context, but in technical communication these variables are paramount. Other considerations (e.g., aesthetic appeal, the conventions of form) are secondary to achieving the immediate purpose of the communication.

Beginning technical writers may want to plunge right into the content of their communication. Even the contents, however, are shaped by considerations of audience and purpose. Technical documents are organized to answer the questions readers are likely to pose. What these questions are, and the order in which the reader will pose them, will vary from one audience to another.



Audience

In technical communication the audience is specific and is often known. At the outset of any project, technical communicators identify their audience and explore its needs. They approach this task in two stages:

1. Classifying the audience on the basis of knowledge, noting that audiences may not always fit neatly into one category. Markel and Holmes (31-39) suggest the following categories:

Audience	Characteristics	Needs	Implications for Text
Expert Carries out research, educates, devises strategies	highly trained; curious; extensive understanding of theory	in-depth discussion of details, implications	specialized vocabulary, complex sentences, sophisticated diagrams
Technician Fabricates, operates, maintains, and repairs mechanisms	practical, hands-on skills; possesses professional tools; experienced in application	schematic diagrams; step-by-step instructions; parts lists	short to medium sentences; trade terms
Manager Co-ordinates and supervises the day-to-day activities of an organization	responsible for long-range concerns; technical background varies widely	practical information on costs, timeframe, demand, advantages	unless known to be expert or technician, use general language
General Reads out of self-interest or curiosity	layperson; no particular background or expertise in field	practical information on effectiveness and cost; step-by-step instructions; interesting information, well-written	avoid technical concepts; provide background; use analogies and examples; use informal tone and standard idiom

2. Identifying characteristics of individual audiences. On many occasions the audience for a technical communications document is known to the writer. Students need to research and reflect on various characteristics of this audience (categories are listed under “Audience Profiles” below).

Markel (1998, 52) suggests that in authentic projects, students may send a memo to their primary audience outlining their plans and asking, “Is this what you had in mind; would this meet your needs?”

Audience Profiles

Writing a formal audience profile is an integral part of major projects. This profile may be based on information from various sources, including

- students' prior knowledge and experience with this or similar audiences
- research into published demographic information or sources such as developmental psychology texts
- an interview or a survey filled in by all or part of the audience
- mission statement and other documentation if the audience is an organization

Ask students to determine which of the following categories are important for their purposes, and to include them in their audience profile:

- education and knowledge level related to the subject
- prior experiences
- the purpose for which it will use the communication
- attitude to the topic (positive, neutral, or negative)
- information needs
- preferred forms or sources of information
- organizational structure and the audience's position within it
- special considerations such as cultural characteristics and preferences that have implications for communications style and form

In order to help students focus on the implications of various audience characteristics, ask them to write a conclusion identifying three audience characteristics they will consider in shaping this communication. Alternatively, ask students to write their profile in two columns, listing audience traits in one column and discussing the ways they will accommodate each trait in the second.

Multiple Audiences

With the ease of transmitting information through photocopying, faxing, and e-mail, audiences are often multiple. Students will need to determine

- their primary audience (people who will act on a communication)
- their secondary audience (people who read it for information); the secondary audience is often not a homogenous group

Because of job specialization, there is often a marked difference in the knowledge of various readers in a multiple audience. Writers deal with multiple audiences in a variety of ways:

- ensuring that the document is accessible to all audiences. This may mean using language that is more general than would be necessary for certain parts of the audience
- segmenting the document and clearly labelling parts that are intended for specific readers (e.g., “executive summary,” “technical analysis”)
- shaping the document according to the needs of the primary audience and addressing the needs of other readers through appendices

Sample Learning Experience: Shaping Text for Audience

- Choose (or ask students to provide) a passage intended for an expert reader. Ask students to rewrite it for a general reader.
- Ask students to write an instruction manual or handbook for a specific audience (e.g., children, ESL students).
- Teach précis writing as a skill for executive summaries. After an oral presentation, ask students to verbally précis the information for a partner.

Purpose

The purpose of all technical communications is to inform or to persuade. This purpose is explicitly stated in technical texts, and it governs all decisions regarding the text. Before beginning to write or produce a text, students need to identify their purpose clearly and to reflect on the best way of accomplishing it. As they write, they reflect on the effectiveness of each aspect of the text (e.g., organization, scope, sentence length, design) in light of their purpose.

Purpose is often two-pronged: the writer's purpose and the reader's. Although these two purposes are related, they are not identical. For example, students may write to the school board suggesting the purchase of a specific piece of equipment. The students' purpose is to persuade the board; the board's purpose is to determine the advantages and disadvantages of this purchase.

Students need to identify their own purpose in producing a document, as well as the purpose to which their audience will put the document. Markel suggests that students think of their communication "not as an attempt to say something about the subject but as a way to help others understand it or act on it" (47). They will need to imagine themselves in the position of the reader.

Sample Learning Experience: Purpose Statements

Suggest that students complete the following statement in order to clarify their two-pronged purpose:

"My purpose is to _____ so that my reader/audience _____." (Oliu, et al., 5)

To help students clarify their purpose, provide verbs sorted into two categories:

Persuading Verbs (Sell) / Informing Verbs (Tell)

assess	authorize
recommend	describe
forecast	explain
request	inform
purpose	illustrate
	outline
	review

Context

Various aspects of the context of a project will shape its contents, form, and language, and may set constraints which students will need to respect. In planning a communication and in every stage of producing it, technical writers need to explore the following elements:

Background: Who initiated the document, the writer or the audience? If this is a proposal, is it solicited or unsolicited?

Time: The time a technical writer spends on a document relates to the purpose of the document:

- How will this document be read? Scanned, skimmed, scoured, evaluated?
- How important is this document to the organization? Is it permanent?
- When is this document needed?

Corporate: The writer's purpose is often not an individual/personal one; it is the purpose of the organization for whom the writer is working. Any technical communication will be shaped by

- the size of the organization
- its protocols and conventions (does this organization use briefing notes or status reports?)
- its culture, values, and ethos

The audiences to whom students write also exist within organizations. Students need to learn

- formal power structures: what jurisdiction does my audience have in this matter? What tone is appropriate?
- informal power structures

Students who are not contracting to work for community organizations can explore the organizational constraints that exist within the school, or within the business where they are employed part time.

Sample Learning Experience:

Ask students with part-time jobs to describe and chart the organizational structure within which they work. Have them write communications related to their jobs (e.g., a crew chief at a fast food restaurant might write a memo to his/her manager, and to someone he/she supervises).

Resources: The resource constraints that shape projects are:

- *Informational:* What do we need to know? Is this information available to us?
- *Financial:* How much money do we need for this project, and how can we raise it? Will this project make money? If so, how will we spend it?
- *Human:* Who is involved? What are the interests, expertises, and schedules of members of our group?
- *Time:* How much time do we have?

Ethics: Ethical concerns often arise from

- conflict between the goals and values of the organization and the writer's own goals and values
- lack of clarity between the "tell and sell" purposes of a communication (Writers may characterize persuasive text as information.)
- disregard of "fair use" policies in using information from widely-available sources such as the Internet

Sample Learning Experience: Ethical Guidelines

Examine with students the Ethical Guidelines for the Society for Technical Communication (these guidelines are found in Appendix A). Ask students to develop parallel guidelines as they pertain to their work in the TechCom classroom.

Alternatively, have students examine professional codes of conduct and write one for the class.

Consolidating Learning

A major assignment can serve as valuable extension of the teacher-directed component, consolidating learning and providing students with experience in teamwork and planning prior to their major projects. Major assignments of the following kinds have been suggested by Manitoba teachers:

- *Engineering Challenge:* Challenge students to create toothpick towers or bridges, or to build boats with precise specifications. Ask students to write proposals outlining their ideas and reports describing and analyzing the success of their projects.
- *Ideas Market:* Have students work in groups to propose a new product, service, technology, or public policy that they hope will be widely adopted by the year 2010. Ask each group to prepare a persuasive presentation to introduce the idea to the individuals (e.g., in business or government) who would implement the proposal.
- *Problem identification:* Ask students to move through the following steps in problem identification-analysis-solution:
 1. Investigate a specific environment (e.g., the school) using tools (such as measurements, tallies of traffic flow, interviews, photos, surveys).
 2. Identify a problem in a particular area (e.g., cafeteria, washroom) or an issue/service (distribution of information/announcements, recycling).
 3. Analyze findings in graphic form.
 4. Propose a solution to parties who could act on this problem (e.g., Manitoba School Improvement Program, student council, parent council), producing a written proposal or an oral presentation.

MAJOR PROJECTS

The major group and individual projects have the potential to be two of the most exciting and valuable learning experiences of students' high school years. These projects require a high degree of autonomy and commitment from students and allow students to experience themselves in public roles such as publicist, consultant, teacher, researcher, and interviewer. For several weeks at a time the classroom becomes the hub of widely varying activities and a link between the school and wider communities.

Some teachers prefer to introduce major group projects first so that students can benefit from the support of classmates before launching into individual projects. Others feel that students are better prepared for the demanding collaboration of the major group projects towards the end of the year or semester. Some choose to conduct the projects simultaneously, scheduling alternate days or weeks for each project. Decisions about the structure of the TechCom course should be reviewed each year. The teacher and students will need to take into account

- students' autonomy and experience in working collaboratively
- opportunities for authentic work in the school or community
- considerations related to time-tabling major presentations and summative assessment

Basing Projects on Authentic Tasks

In all subject areas, students are more highly engaged when they perform authentic tasks for real audiences. In TechCom, where audience, purpose, and context are paramount considerations, finding authentic tasks is vital. Much of what students in TechCom learn arises from the constraints of performing actual tasks for actual audiences. Authentic tasks also increase accountability, as students benefit from successful communication and deal with the problems created by unclear or incomplete communication.

Risk-Taking in Authentic Projects

Authentic assignments involve risk-taking. Approaching and working with community organizations and individuals may be a new experience for many students. Having a public audience for their work increases the stakes. Teachers can create a risk-taking environment by

- encouraging students to take on new challenges
- acting as a sounding board for student ideas and supporting students in developing their own judgement rather than advising and directing
- refraining from placing undue emphasis on learning outcomes related to final products
- teaching students to be resilient when their plans don't work out
- being positive about the learning benefits of failed endeavours

Acting as coach to students conducting major projects poses risks and challenges for the teacher as well. Teachers may be unfamiliar with the content of various major projects. They will be faced with the challenge of developing policies related to liability and with supervising students working outside of the school setting. Embarking on different student-selected projects means that the TechCom course is a new and stimulating experience each year or semester. The major projects provide teachers with a valuable opportunity to model the attitudes of learners.

Finding Authentic Projects

Where can technical communication students and teachers find authentic assignments? Technical Communication courses in Manitoba schools have found interesting and worthwhile projects by

- partnering with community groups or contracting to work for community groups and businesses. Ask students to promote their services through a print advertisement or brochure. When a group responds to their ad, students will interview the client and write a proposal outlining the objectives of the project. Any task they assume will be subject to school and parents' approval. Examples of tasks include working with the RCMP to plan an anti-racism day, fundraising for a charity, or producing a newsletter for the seniors' centre.

- performing cross-disciplinary assignments or tasks for other courses within the school. In performing tasks like these, students will need to determine the expectations of the teachers of the courses involved. These expectations become one of the constraints of the project. Students may create, for example,
 - computer-based tutorials for students struggling in physics or maths
 - picture-word dictionaries for ESL students
 - handbooks for a sports team or co-op ed course
 - PowerPoint presentations
 - a series of labs for physics, chemistry, or biology
 - technical production for school events such as a fashion show or multi-cultural evening
- assuming public relations tasks in school: producing radio announcements, handbooks and brochures, newsletters, and posters
- performing communications tasks that relate to their own part-time or volunteer jobs
- identifying and defining problems in the community and working towards solutions. Student projects may follow a three-step model of problem identification, definition, and solution. Examples include
 - structure and layout of a seniors' centre
 - staffing of a care home
 - need for a recreation centre
 - use of space in a public area or playground

Selecting a Project Topic

The first problem-solving task the teacher and students encounter in the major projects is selecting a topic. Selecting a suitable and worthwhile project topic is extremely important; students will spend many hours, inside and outside of class time, on each of their major projects. Students should use various strategies over a period of days or weeks to explore and weigh ideas for these projects before making a decision.

Teachers can support students in selecting project topics by

- reviewing strategies for generating ideas (e.g., brainstorming, webbing, interviewing)
- having students survey the school or community to identify authentic tasks
- encouraging students to identify and explore several possible projects before settling on their selection
- fostering a spirit of sharing so that other students can provide input
- working with students to clarify and refine ideas
- asking students to contribute to a list of criteria (such as those on the following checklist) for evaluating their ideas for projects.

Checklist: Evaluating Project Topics	Yes	No
This project would let me explore a subject I'm interested in.	<input type="checkbox"/>	<input type="checkbox"/>
I know of an audience that would be interested in my presentation.	<input type="checkbox"/>	<input type="checkbox"/>
There are reliable, accessible sources of information on this topic.	<input type="checkbox"/>	<input type="checkbox"/>
This project can be accomplished within the available time.	<input type="checkbox"/>	<input type="checkbox"/>
This is a worthwhile project.	<input type="checkbox"/>	<input type="checkbox"/>
This project would be interesting and challenging to explore and present.	<input type="checkbox"/>	<input type="checkbox"/>

Forming Groups

Groups may be as small as three students, and should not exceed five. (Occasionally students will form small sub-groups within a larger group.) Because they need to have a high degree of commitment to their group and may need to work together outside of school hours, groups should be carefully constructed in consultation with the teacher. Students should have had some collaborative experience with each of their classmates before they form groups for the major projects. Groupings may be based on existing friendships or on mutual interests that are discovered in the process of exploring possible topics. Again, encourage students to enter discussions with

various classmates before making a decision as to working partners, and to consider working with classmates who may bring a different perspective and experience that will enrich their own.

Proposals

Require students to submit a proposal for all major projects (group and individual), and to have this proposal approved. As a means of helping students learn to plan, work with students to identify the categories of information required in each proposal. Depending on the type of project and the course specialization, the categories may include

- purpose
- audience characteristics and needs
- outline of contents
- resources (primary and secondary)
- team members and their respective responsibilities
- steps in research and production
- risk factors and plans for addressing them
- a description of the final presentation, including audio-visual and interactive components
- timelines
- criteria for success

Remind students that they will need to report and negotiate with the teacher any changes to this proposal.

Classes may decide to have project proposals reviewed by other instructors or members of the community.

Managing Projects

Careful management of projects is essential to learning and assessment. In TechCom project management is an authentic way of applying learning, for many of the forms used in project management (e.g., proposal, memo, incident report) are technical forms. Teachers may also wish to use a project-management model that is consistent with industry, and they may wish to have the technical content of projects assessed by an outside expert.

Teachers will develop and refine their own processes for managing projects. These processes may include:

1. *Documentation of each project filed in a binder or folders.* This documentation may include:
 - the proposal
 - detailed plans and timelines
 - copies of surveys and questionnaires
 - copies of correspondence
 - minutes and agenda when group meets
 - incident reports when the group encounters problems
 - protocol and permission slip for working outside the school
 - a memo describing student plans on days designated for field work
 - description of processes for analysing data
 - progress reports
 - assessment rubrics and checklists
 - assessment summary sheets
2. *Project logs.* Projects logs are an effective way of promoting accountability in individual and group projects. Establish expectations for what is to be recorded in the log and how frequently log entries are to be written. Entries may include:
 - date and hours worked
 - daily roles and responsibilities in group projects
 - plans and processes
 - resources explored
 - findings summarized
 - reflections on collaborative processes, decision making, and learning

3. *Written progress reports to be filed weekly.* In group projects, this report may be completed by individual group members in rotation, but will be signed by all members. The teacher or students may want to design a form appropriate for the particular project. Blicq (1972, 82-83) suggests students be asked to report on
 - what the group as a whole has accomplished to date towards completing the project
 - processes and strategies used this week
 - what each group member accomplished this week
 - risk elements and recovery plans identified
 - goals for the coming week
4. *Oral status report.* Periodic oral status reports maintain communication and cohesiveness in the class when students are involved in a variety of different projects and provide time for reflection, debriefing, closure, and celebration. Designate a time and ask students to move their tables or desks into a circle. Ask individual students or representatives from each group to report on a specified aspect of their project. After each report, ask other class members to comment or engage in problem solving.
5. *Assessment summary sheets listing relevant learning outcomes.* Arrange to have students submit components of their projects in stages for assessment. Record their standing in identified learning outcomes on assessment summary sheets. Sample sheets follow in “Assessing Projects.”

Besides providing the benefits of ongoing assessment, this system helps students manage their time and helps teachers manage the heavy load of project assessment.

Assessing Projects

Because the major projects comprise the majority of time and work in the course, most of the learning outcomes will be assessed in the context of projects. Rather than submitting a huge binder of materials for assessment at the end of a project, students in TechCom are provided with ongoing and continuous feedback from classmates and teacher as projects proceed. Ongoing assessment is essential

- to maximize student learning. Assessment that happens after projects are completed has very little impact on learning
- to inform the teacher of needs and priorities for instruction
- to assess learning outcomes related to process and collaboration

Students may demonstrate various learning outcomes through different components of their project. These components may be submitted for peer or teacher assessment according to timelines listed in the project proposal. These include

- proposals
- audience profiles
- annotated bibliographies
- checklists and observations of group process
- interview tapes
- survey forms and analysis
- performance or presentation
- project log
- individual and group written reflection

The following Project Assessment Summary sheets illustrate one method for recording student attainment of selected TechCom learning outcomes at various stages of a major project.

- Learning outcomes (in an abbreviated form) are listed in a column on the left.
- The various components of the project that will be assessed are written in the spaces across the top of the chart.
- The learning outcomes to be assessed in each component are identified by shaded squares in the chart.
- The student's level of achievement in each of these identified learning outcomes (on a four-point scale) can be determined by reading across the chart.

Project Assessment Summary

Preliminary Work

Name: _____

- 4 = Above level
- 3 = At level
- 2 = Below level
- 1 = Below grade range

	<i>brainstorm sheets and topic web</i>	<i>proposal</i>	<i>audience profile</i>
1.2.2 Develop and use various problem-solving skills and approaches.			
3.1.1 Identify purpose and parameters of task.			
3.1.2 Develop project plan.			
2.3.1 Develop criteria to evaluate own . . . texts.			

Project Assessment Summary

Process

Name: _____

- 4 = Above level
- 3 = At level
- 2 = Below level
- 1 = Below grade range

	<i>progress reports</i>	<i>surveys and questionnaires</i>	<i>data analysis</i>	<i>written drafts</i>	<i>rehearsal video</i>
3.1.3 Follow plan.					
3.1.4 Evaluate, record, document, and organize information.					
4.1.1 Generate, evaluate, and select ideas, information, and data.					
4.1.2 Select and adapt form and medium most appropriate to audience, purpose, and context.					
4.1.4 Draft texts.					
4.2.1 Evaluate and revise content and presentation elements.					
4.2.3 Edit for clarity and precision.					
4.2.4 Develop and use proofreading skills and strategies.					

Project Assessment Summary

Presentation

Name: _____

- 4 = Above level
- 3 = At level
- 2 = Below level
- 1 = Below grade range

	<i>oral presentation rubric</i>	<i>visual component</i>	<i>audience feedback sheets</i>	<i>self-reflection</i>	<i>written products</i>
5.2.2 Use knowledge of cultural and organizational characteristics.					
4.3.1 Adjust elements in oral presentations to accommodate audience response.					
4.3.3 Evaluate presentations and texts.					
5.2.1 Adapt language, dress, and behaviour to a variety of . . . environments.					

WORKING COLLABORATIVELY

Language and Technical Communication provides students with a theoretical framework regarding collaboration and with opportunities to experience themselves in various collaborative roles. This emphasis on collaboration prepares students for the realities of post-secondary education, personal relationships, community organizations, and contemporary workplaces where much of the work individuals do is co-operative. Instruction in collaboration can take place in the teacher-directed component of the course, be practised in teacher-supervised group assignments, and be applied and assessed in the major group projects.

Use a four-step model to help students develop collaborative skills and strategies:

1. **Direct Instruction:** Explicit instruction in collaborative processes provides students with a structure and vocabulary for exploring their own interactive processes. It raises their awareness of the roles they play, prepares them for the conflicts that are a normal part of group work, and gives them strategies to work through conflicts.
2. **Observation and Analysis:** Set up various simulations that allow students to observe and identify behaviours that promote collaboration and those that impede it.
 - Fishbowl: Ask one group to perform a simple task collaboratively while other students observe. Ask half the observers to list task performance skills they observe, and the other half to list group maintenance skills.
 - Explore professional case studies to analyze the difficulties that may arise in groups.
3. **Practice:** Before students begin the high-stakes work of negotiating a major project, ask them to practise collaborative skills by working on less demanding tasks. Use strategies to expand students' repertoire of skills and raise their awareness of the effect of various behaviours on groups. For example, ask each student to assume a particular role ("wear a hat") during a collaborative exercise (e.g., Ms. "Yes, but—", Mr. Non-Sequitur, Ms. I Did It My Way).

- 4. *Application and Monitoring:*** As students begin to work on major group projects, help students raise to a conscious level the way they function in the group and ask them to set goals for their own development in collaboration. Work with students to develop and modify checklists and forms they may use to monitor their collaborative processes. Observe groups systematically to determine priorities for further instruction. Provide immediate feedback to individuals and groups, suggesting strategies to groups encountering difficulties.

Learning about Collaboration

Appendix B provides the following handouts and supports for explicit instruction in collaboration:

1. *Collaborative Skills*

Review the skills that are necessary for successful collaboration. Suggest that students assess their own strengths and needs and identify goals for growth.

2. *Stages of Group Development*

Knowing the stages through which all learning groups evolve helps students respond appropriately and with confidence to developments in their own group. Examine the stages and ask students to recount past group experiences, identifying stages. As projects proceed, suggest that students reflect in projects logs on the ways their groups are evolving.

3. *Active Listening*

This handout discusses the importance of active listening as a basis for collaboration.

4. *Reaching Consensus*

Students may have little prior experience using a consensus model of decision-making. Share this model with students and allow them to practise through exercises in consensus-building.

5. *Trouble-Shooting*

Students need to know that conflict in groups is normal and inevitable. This handout provides strategies for dealing with conflict and tensions in groups.

Supporting Collaboration in the Major Group Project

When students encounter major difficulties in their group projects, the primary cause is usually a breakdown in collaboration. It should be recognized that conflict within groups is normal and can provide information about the skill areas that need development. Work with groups that are experiencing difficulties and remind students that their responsibility is to confront problems and maintain collaboration, rather than over-functioning and performing work assigned to other group members.

Teachers can also support collaborative work by:

- identifying elements in the project plan that require close collaboration and suggest strategies for dealing with these elements. Students who intend to generate text collaboratively, for example, will need to develop a protocol for collaborative writing.
- ensuring that projects are designed so that students are individually and collectively responsible for processes and product
- sharing the learning outcomes related to collaboration with students so that they recognize the sort of learning that is expected of them

Constructing Interdependent Tasks

Collaborative projects need to be structured to allow for two kinds of assessment:

- Individual student learning will be assessed in the context of collaborative work. Group projects need to be structured to allow for individual students to demonstrate their attainment of a wide range of learning outcomes, including their collaborative skills.
- Learning outcomes specific to collaborative work will also be assessed for the group as a whole. These may include learning outcomes 1.2.2, 2.3.1, 3.1.1, 3.1.2, 3.1.3, 4.3.2, and 5.1.5.

Ensure that students know which learning outcomes will be assessed throughout the stages of the projects—those that will be assessed on the basis of individual work and those that will be assessed on the basis of the group's performance.

Promote individual accountability in student-planned collaborative projects and collect information about the learning of individual students by requiring components such as:

- proposals that detail the responsibilities of each member
- project logs in which each student tracks his/her progress each day, and discusses any problems that have arisen within the group
- identification of the separate contribution of each member to a collective product (e.g., when students contribute articles to a magazine, certain learning outcomes will be individually assessed based on each student's contribution, others will be assessed for the group as a whole based on the magazine as a whole)
- separate drafts from each individual before a collaborative product is put together
- individual self-assessment forms and checklists
- verification that students have revised, edited, and proofread pieces of work authored by other group members

Group learning entails assessing student skills in an open forum. Because of this, ensure that assessment is conducted with sensitivity, respect for individual differences, and a recognition that a myriad of factors may affect student performance in groups.

Team Building

The collaborative work students do often requires openness, risk-taking, and negotiation. Even when students are acquainted with each other, this sort of collaboration may be very difficult if group members have not developed a sense of trust and a working relationship. Inform students that their main goal during initial group sessions is to get to know each other and to establish a positive working relationship. Use strategies such as the following:

- Suggest that various team-members act as facilitators in choosing and leading the group in a short trust exercise at the beginning of initial group sessions.
- Identify team-building experiences that are relevant to the project in which groups are engaged.
- Suggest that groups make small decisions first. Discuss processes for reaching consensus in the context of these small decisions, and ask students to practise, reflect, and debrief on their processes.

Assessing Collaboration

Ongoing Assessment

Use various strategies to collect assessment data about collaboration as projects proceed.

- Ask each group to spread out and observe others for one working session, recording their observations on a checklist.
- Observe each group periodically (e.g., for three sessions), using a checklist and/or writing anecdotal observations. Share observations with groups immediately after the session.
- Ask students to reflect on their performance in groups in project logs.
- Have groups fill in a daily checklist to monitor group performance.

Sample Checklist for Periodic Observation	Student Names				
Observation Criteria					
The student					
• initiates activity					
• listens actively					
• invites others to contribute					
• expresses disagreement appropriately					
• clarifies and summarizes					
• takes on responsibilities					

Daily Group Checklist	Student Names				
Date _____					
Observation Criteria					
The student • was present					
• was on time					
• brought materials					
• completed assigned work					
• contributed throughout the period					

End of Project Self-Assessment

At the end of a group project, ask groups to work together in assessing their collaboration using a rating scale. (A sample rating scale follows.) Following this group assessment, ask students to write a final entry in their individual project logs, exploring what they learned about collaboration and about themselves.

Assessment of Collaborative Group Work

Work together to assess your collaborative processes, using the following rating scale.

Rating Scale

- 4** We were consistently strong in this area.
- 3** We were usually effective in this area.
- 2** We were sometimes effective in this area.
- 1** We were not effective in this area. We experienced problems that we did not attempt to resolve.

Group Process	Rating
• We were respectful of individual group members' approaches and strengths.	_____
• We encouraged and supported each person in contributing to group discussion and decision making.	_____
• We questioned and challenged each other's ideas, but did not make personal attacks.	_____
• We tried to explore a wide range of ideas and perspectives prior to making decisions.	_____
• We shared work and responsibility equitably.	_____
• We dealt successfully with the problem of absent or disengaged members.	_____
• We openly discussed our concerns rather than letting tensions build.	_____
• We made decisions through consensus.	_____
• We used our time productively.	_____
• We achieved a product that we are proud of.	_____

Teacher Summative Assessment

To assess each student's attainment of learning outcomes related to collaboration, collect various pieces of data (e.g., project log, daily group checklists, periodic teacher observations, summative rating scale). Assess targeted learning outcomes, recording student's achievement on a Project Assessment Summary sheet (a sample follows).

Project Assessment Summary

Collaboration

Name: _____

- 4 = Above level
- 3 = At level
- 2 = Below level
- 1 = Below grade range

	<i>project log</i>	<i>daily group checklists</i>	<i>periodic teacher observations</i>	<i>summative rating scale</i>
5.1.1 Know and manage the dynamics of collaboration				
5.1.2 Demonstrate commitment and flexibility in groups, supporting others' participation.				
5.1.3 Adjust roles and responsibilities according to task requirements in group projects.				
5.1.4 Assume ownership for group processes and products.				
5.1.5 Evaluate the effectiveness of group processes in solving problems and achieving goals.				

APPENDIX A: ETHICAL GUIDELINES

STC Ethical Guidelines for Technical Communicators*

As technical communicators, we observe the following ethical guidelines in our professional activities. Their purpose is to help us maintain ethical practices.

Legality

We observe the laws and regulations governing our professional activities in the workplace. We meet the terms and obligations of contracts that we undertake. We ensure that all terms of our contractual agreements are consistent with STC Ethical Guidelines.

Honesty

We seek to promote the public good in our activities. To the best of our ability, we provide truthful and accurate communications. We dedicate ourselves to conciseness, clarity, coherence, and creativity, striving to address the needs of those who use our products. We alert our clients and employers when we believe material is ambiguous. Before using another person's work, we obtain permission. In cases where individuals are credited, we attribute authorship only to those who have made an original, substantive contribution. We do not perform work outside our job scope during hours compensated by clients or employers, except with their permission; nor do we use their facilities, equipment, or supplies without their approval. When we advertise our services, we do so truthfully.

Confidentiality

Respecting the confidentiality of our clients, employers, and professional organizations, we disclose business-sensitive information only with their consent or when legally required. We acquire releases from clients and employers before including their business-sensitive information in our portfolios or before using such material for a different client or employer or for demo purposes.

(continued)

* **STC Ethical Guidelines for Technical Communications:** Reprinted with permission of the Society for Technical Communication.

Quality

With the goal of producing high-quality work, we negotiate realistic, candid agreement on the schedule, budget, and deliverables with clients and employers in the initial project planning stage. When working on the project, we fulfill our negotiated roles in a timely, responsible manner and meet the stated expectations.

Fairness

We respect cultural variety and other aspects of diversity in our clients, employers, development teams, and audiences. We serve the business interests of our clients and employers, as long as such loyalty does not require us to violate the public good. We avoid conflicts of interest in the fulfillment of our professional responsibilities and activities. If we are aware of a conflict of interest, we disclose it to those concerned and obtain their approval before proceeding.

Professionalism

We seek candid evaluations of our professional performance from clients and employers. We also provide candid evaluations of communication products and services. We advance the technical communication profession through our integrity, standards, and performance.

APPENDIX B: LEARNING ABOUT COLLABORATION

Collaborative Skills: A Student Inventory

Working together successfully requires two kinds of group skills:

- **Task performance skills:** These are the behaviours that are effective in getting a job done—the behaviours that keep the group focussed, purposeful, and efficient.
- **Group maintenance skills:** These are the behaviours that keep the group functioning smoothly, reduce conflict, help each member feel respected, and make collaboration an enjoyable experience.

Some people have significantly stronger skills in one area than the other. A group of students with high task performance skills may have real difficulty in group work if they don't also attend to group maintenance—ensuring that everyone feels a valued part of the group. Similarly, students with high group maintenance skills may have a pleasant time but accomplish very little if they don't also use task performance skills.

Use this checklist to assess your strongest skill area and to identify skills that you need to develop.

Some skills have a dual purpose and appear on both lists.

1. Check the task performance skills you typically use in a group:
 - I take steps to get the group started.
 - I ask other group members for their ideas, information, or opinions.
 - I speak up to offer my own ideas, information, or opinions.
 - I clarify the ideas that have been contributed, the next step the group needs to take, or the direction the group has decided on.
 - I co-ordinate what each member contributes.
 - I summarize the group's progress.
 - I listen actively.
 - I analyze difficulties and suggest solutions.
 - I take on and meet responsibilities.

2. Check the group maintenance skills you typically use.

- I encourage others.
- I invite others to contribute.
- I accept group decisions.
- I express disagreement appropriately.
- I use respectful, encouraging, and tactful language.
- I listen actively.
- I use humour to ease tension.
- I analyze difficulties and suggest solutions.
- I take on and meet responsibilities.

3. Summary:

My strongest skills are in the area of

- task performance
- group maintenance

The three skills I will focus on developing are:

Stages of Group Development

Learning groups—especially groups that work together for an extended period of time as students do in the major projects—predictably move through certain stages. Being familiar with these stages can foster confidence in students working collaboratively and help them solve difficulties that arise in groups.

The stages in group development observed by Tuckman (1965), Johnson and Johnson (1982), and others researchers are described below. The length of each stage varies with a number of factors (e.g., the length of the project, how much autonomy students are given, how well-acquainted group members are at the outset, how skilled student members are in group processes). These stages may even be observed in the class as a whole as it develops into a productive learning community.

1. **Orientation:** Groups members determine the expectations of the project, the roles they will assume, and the processes they will follow.
2. **Establishing Norms:** Group members become familiar with each other's strengths, weaknesses, and approaches to work. They begin to develop trust and interdependence, and to recognize that their success in the project depends on working together. Johnson and Johnson (1982, 434) suggest that the following norms be stressed during this stage:
 - taking responsibility for one's own learning and the learning of other group members
 - providing help to other group members
 - responding to other group members in an accepting, supportive, and trustworthy way
 - making decision through consensus
 - confronting and solving problems in group functioning
3. **Conflict:** Conflict in groups is inevitable, and has many causes and expressions. These include
 - failing to follow through on individual responsibilities
 - resisting commitment to the group ("I'd rather do this on my own.")
 - testing the teacher's commitment to co-operative learning ("Can you mark us individually?")

- friction between particular members
- struggle for leadership
- blaming others in the group for the group's lack of progress

Conflicts must be confronted if the group is to continue to develop. They cannot be resolved by the teacher's attempts to exert greater control and enforce the group norms, or by the efforts of individual students to mask difficulties by assuming a greater share of responsibility. Teachers can support groups at this stage by expressing commitment to the collaborative process, instructing students in strategies for dealing with conflict, and mediating difficulties when necessary.

4. ***Commitment and Productivity:*** Students who successfully confront conflicts and deal with them in constructive and respectful ways develop a personal commitment to the collaborative experience. A sense of group identity emerges, and the norms established in Step 2 become an expression of group members' commitment to each other, rather than an external expectation. All members participate, ask for and receive help, and share leadership. There is a sense of pride in group accomplishments. Groups may not mature to this stage, but need to be helped in identifying the factors that impede their productivity.
5. ***Closure:*** Groups that have developed maturity and cohesion may find the ending of a collaborative experience an emotional time. Reflection on the learning that has taken place, and celebration of accomplishments help to provide a sense of closure.

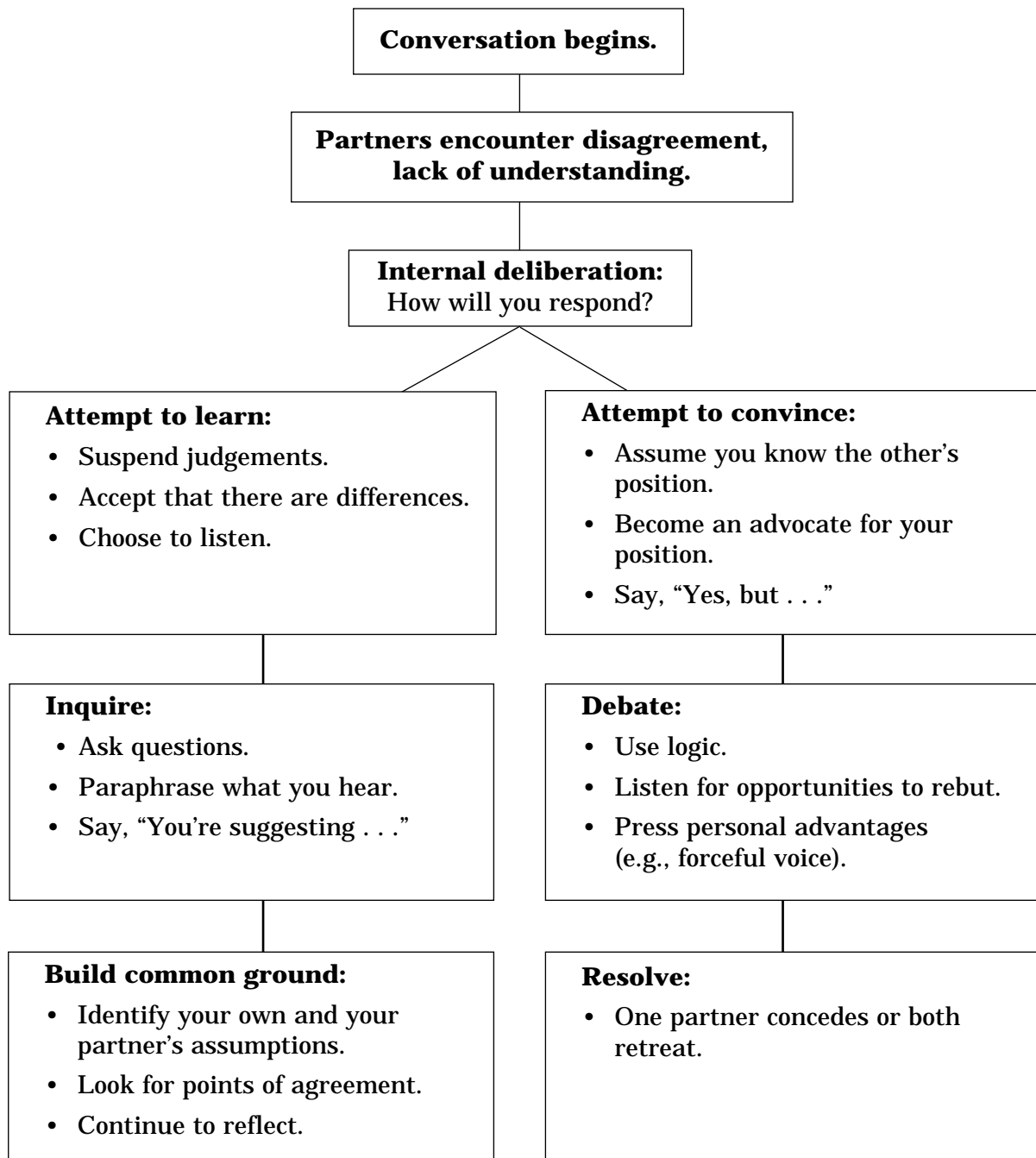
Listening to Learn: Handout

What appears to be dialogue is often two parallel monologues. People appear to be listening to each other—they may even make encouraging “uh-huh” sounds—but instead of really listening they’re planning what they’ll say next. The minute their partner pauses to catch a breath they plunge in with their own argument or story.

The diagram below describes two kinds of listening. On the left, partners listen with an inquiring attitude and a genuine desire to understand the other’s point of view. On the right, partners listen for a weakness in the other’s argument or an opportunity to press the strength of their own case. This may be a useful kind of listening if you are involved in a debate, but you are less likely to learn what your partner is really trying to say.

Successful collaboration is not based on refuting your partners’ ideas so that the whole group will do everything your way. It is based on finding common ground that everyone can agree on. In order to establish this common ground, you really have to listen to learn what your partners think.

Two Kinds of Dialogue*



* Reprinted from *Senior 4 English Language Arts: A Foundation for Implementation*.

Reaching Consensus: Teaching Strategy

In order for group members to have the necessary commitment to projects, suggest that groups use consensus, rather than other forms of decision making (e.g., voting and majority rule), to make decisions.

<i>Consensus is</i>	<i>Consensus is not</i>
<ul style="list-style-type: none">• based on identifying common ground• reached by acceptable compromises• always a decision that reflects the ideas and values of all group members	<ul style="list-style-type: none">• based on majority rule• reached by complying with the most outspoken group member• always a decision that represents everyone's first choice

1. Ask students to write briefly about the process by which groups in which they participate normally make decisions.
2. Explore with students what consensus means and how it differs from other forms of decision making.
3. Have the class share their suggestions for how consensus can be reached in groups.
4. Building on positive suggestions from this discussion, develop a list of steps groups may use in reaching consensus. They may include:
 - Ask each group member to express his or her ideas and preferences.
 - Identify the essential differences between these positions.
 - Ask members to state what they are willing to concede in order to reach consensus.
5. Ask group members to list strategies they may try when the normal means of reaching consensus are not successful. These may include:
 - move back to exploratory talk to identify underlying concerns
 - resolve the easiest issues first
 - ask all group members to generate more than one option they would accept
 - take time out and approach the problem another day
 - when all other alternatives have been tried, ask a neutral person to mediate

Trouble-Shooting: Handout

All groups that work together for an extended period of time experience conflict or problems of one kind or another. These conflicts are normal and inevitable, and dealing with them is a valuable part of learning to work with others. When tensions and difficulties arise, **do not**

- assume that everyone sees this problem the same way as you do
- talk about individual group members behind their backs
- try to cover up the problem by doing more than your share of the work
- split into factions

Instead, express your commitment to the group by initiating one of the following problem-solving strategies.

Open Group Discussion

1. Express your concern to the whole group, describing what you see in neutral, non-blaming terms. Use “I” statements (“I’m concerned that we’re falling behind.”) rather than “you” statements (“You aren’t keeping up with your responsibilities.”)
2. Work together to identify the cause of the problem.
3. Try to find a solution acceptable to all members.
4. Ask for outside help if you can’t solve this on your own.

Writing Prompts

If group members feel tense or angry about the situation, you might want to use the following strategy before you attempt to discuss.

1. All group members write individually, using these prompts:
“This is what I see happening:”
“This is the role I see myself playing in the group:”
2. Ask all members to share what they have written. Listen respectfully to each other and ask for clarification if you don’t entirely understand.
3. Have each member write using a third prompt:
“In order to resolve this conflict, I need to compromise in the following ways:”
4. Share these statements and talk through solutions that emerge.

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