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1. Assessment of Academic Achievement Level

As it is said that "evaluation" in general is an information tool, grade evaluation at universities is also a tool for providing information. It is used by the faculty to learn the degree of student comprehension of lecture content in accordance with the course objectives (course overview) clearly indicated in the syllabus, and as a tool to measure how close students are to the course goals also stated in the syllabus. In other words, it is an assessment of academic achievement level. Grades show how much students have developed through the lectures they have attended.

Academic achievement level assessment is therefore not simply an assigning of letters from A to F, nor is it merely a means of passing or failing students. It provides important information for the faculty in recognizing the degree of comprehension, and at times, in reviewing and changing lecture content. For example, while quizzes, mid-term examinations and paper assignments during the 15 classes afford approaches to discerning the efforts and growth status of each student, they are also methods the faculty uses to review and tailor class content to meet the needs reflected in the learning status of students. Of course, quizzes and examinations are graded and assigned an evaluation from A to F, but such grading and evaluation are conducted fairly in accordance with the objective grade evaluation standards indicated beforehand. These evaluation standards would be meaningless unless they objectively measure whether or not students are progressing along the course schedule. Therefore, the intent of questions and grading standards must be clearly indicated beforehand; feedback to students on quizzes, final examinations and paper assignments are essential.

There is a trend toward diversification in methods of measuring academic achievement level. Diverse methods, such as in-class essay examinations, paper examinations that require investigation on a topic, quizzes picking up on keywords of the course, evaluation by interactive interviews, and multiple choice examinations using bubble sheets are being used to assess the academic achievement level. Many more methods of examination will be developed in the effort to accommodate varied lecture/class formats, such as lecture formats, seminar formats and field-work formats, or according to the number of students in the class.

The importance of assessing academic achievement level, a tool in learning how much the lectures are contributing to student growth, is expected to continue increasing.

2. Guidelines on Creating Examinations

Choosing the type of examination to administer depends greatly on the nature of the subject, class format, number of students etc., but here we would like to confirm some guidelines on creating questions for two major examination categories, namely the "on-site examination" and the "paper examination."

On-site examination

While entrance examinations generally aim to eliminate excess enrollee candidates, university examinations and quizzes measure student proficiency levels. Therefore, instead of posing questions to which most of the students do not know the answers, examinations should serve to measure how close the students have come to the course goals in the syllabus. From this perspective, an extremely low average score may be a sign that the examination did not reflect the course content as well as it should, and that a review may be necessary.

The two major types of questions on examinations are "multiple choice" and "essay." Please understand the merits and demerits of both types, so that you can "mix and match" for an optimum examination.

	Multiple choice	Essay
Merits	Questions and answers are one-to-one; grading standard is clear-cut, easy to grade, highly objective and very fair. Since many questions can be asked in this format, a broad range of the course can be covered evenly and all key points can be addressed.	Reveals the comprehensive ability of the students, and since the answers are not uniform, various perspectives in the answers can be recognized and evaluated.
Demerits	Tend to be too knowledge-oriented; difficult to measure logical thinking and writing abilities.	Since many elements are encompassed in one question, the answers can vary greatly, often rendering evaluation standards ambiguous and requiring much grading time.

Paper assignment

While on-site examinations are suitable for measuring the proficiency level of students in regard to course content, paper assignment is effective in respecting the self-initiative of the students in digging deeply into a specific subject for extensive consideration. However, prior to university many students have never written anything more than a book report, and papers submitted tend to be poorly written. Therefore, to improve the learning effect, guidance in "what is required in paper assignments at a university" is essential. Particularly for classes with a large number of first year students, it is necessary to take time to explain the technical aspects of writing a paper, such as how to structure a paper, how to research reference materials and how to write "notes" for citations. Also, to counter the recent issues of "copying & pasting" (copying and pasting from the Internet), some measures are necessary; one obvious one is to thoroughly enforce the citation rules, but it is also effective to provide paper topics relating to course content, specifically indicating the key points to be included in the paper.

The Center for Learning Support and Faculty Development holds an extracurricular program called "Academic Skills Seminars" (see P.10) on a regular basis. It may be also effective to encourage students to participate in such on-campus programs.

🌐 Reference URL

• Types of examinations and precautions (Paper title page/Application for Makeup Examination downloads)
http://www.doshisha.ac.jp/students/curriculum/exam_type.html

3. Fundamentals and Principles of Grade Evaluation

Grade evaluation shows the achievement level of the students that have taken the class. Measuring the level of understanding of each student in comparison with the course goals, and presenting the results to the students, is the definition of grade evaluation. This is what differs from examinations that target unspecified groups of students that did not take a certain class. For problem-free grade evaluation, it is necessary to determine specific course goals and assessment methods beforehand.

For example, if the course goal states that the student must learn 100 English words, and assessment is via written examination, the proficiency level of the student who correctly defines all the words is 100%, while the student who could only provide 30 correct definitions is at the 30% level. This is an extreme example, but in actual classes it is necessary to have course goals be as specific as possible. Recommended is use of such expressions as "Students will be able to…" in order to clearly indicate the evaluation points of the course. Ambiguous course goals impede accurate measurement of student proficiency levels, rendering consistent and fair grade evaluation impossible.

Also, proficiency levels should not be measured solely on the basis of the final examination, but should be conducted multifacetedly using evaluation items such as mid-term examination, quizzes, class performance etc. In regard to the final grade, the percentage of all evaluation items should be clearly indicated. (For example, Class performance: 20%, Quizzes (3 times): 30%, Final written examination: 50%.)Having multiple evaluation items creates more work for both teacher and student, but it is also important in creating dialogue between the two, so as to avoid unidirectional class teachings. By employing multifaceted evaluation and fastidiously checking student proficiency levels, teachers can early-on discover problems students may have, and can then change the direction of or supplement the course content as needed.

It goes without saying that course goals, as well as methods and standards of grade evaluation, must be clearly indicated in the syllabus. Students rely on the syllabus to acquire a grasp of course content, schedule and methods and standards of grade evaluation in choosing their classes. If details cannot be sufficiently explained in the syllabus, it is important to establish a mutual awareness between teacher and students on the first day of class, so as to avoid unnecessary misunderstandings based on assumptions. Also, try to proceed with your teachings in accordance with the indications in the syllabus.

Finally, the main purpose of grade evaluation is not to rank students. Always maintain educational considerations when grading. Proficiency levels vary by student. It is important to encourage students to reflect upon themselves, so as to identify issues and facilitate future learning. From this perspective, excessive stringency in grade evaluation damages the ambition of the students. Similarly, being too lenient in grade evaluation lowers student motivation.

4. Stringent Grade Evaluation

The entire Doshisha University uses the GPA system. For undergraduate students, grade evaluation is on a five-point scale (A, B, C, D and F), each grade being assigned grade points from 4.0 to 0.0 to derive the GPA (grade point average) for each credit. Graduate School subjects are evaluated on a seven-point scale (A+, A, B+, B, C+, C, and F); grade points range from 4.5 to 0.0.

> (Undergraduate) A: 4.0, B: 3.0, C: 2.0, D: 1.0, F: 0.0
> (Graduate school) A+: 4.5, A: 4.0, B+: 3.5, B: 3.0, C+: 2.5, C: 2.0, F: 0.0

GPA is calculated using the following formula, including credits with Fs (fail); if students reregister credits for which they received Fs and receive D (or C in the case of graduate school) or above, the respective Fs are changed to the new grade for calculation.

> <Undergraduate> (different calculation for graduate schools)
> (A) x 4.0 + (B) x 3.0 + (C) x 2.0 + (D) x 1.0 + (F) x 0.0/(A) + (B) + (C) + (D) + (F)
> * (A) to (F) is the total number of credits receiving each evaluation

The GPA system is widely used in American and European universities, and can be considered an internationally recognized grade evaluation standard. A stringent grade evaluation based on global standards enables students to use that information to prove their academic performance when studying abroad or seeking employment at foreign companies.

The GPA system has several outstanding merits. For students, grade evaluation is indicated each semester, using objective numbers, providing a reference index to promote active learning. Also, to promote fairness and transparency of evaluation, the average grade and distribution of grades for subjects/classes is published on the website as Grade Evaluation Status. For teachers, the Grade Evaluation Status provides an index for determining whether or not their grade evaluation is appropriate. By viewing the Grade Evaluation Status for same-subject classes taught by different faculty, one can check whether or not evaluations are unbalanced, or if there are major differences in evaluation for certain faculties or departments. Publication of the Grade Evaluation Status is said to have the effect of encouraging teachers to conduct stringent and fair evaluation.

The GPA system is currently used for many purposes. In addition to serving as information for individual study guidance for students, it is also used as a standard for selecting scholarship and tuition waiver candidates, as well as for screening applicants for graduate school and dispatching overseas student candidates. Such wide use of the GPA system, even as selection criteria, obliges teachers to conduct stringent and fair grade evaluation so as to avoid unnecessary disadvantages to students.

Students can ask questions or file a formal objection regarding their grade evaluation as indicated on their report card. When asking a question or filing a formal objection, students must submit a Grading Question Form to the office of the affiliated faculty/school/graduate school or to the Center for Academic Affairs at either campus within one week from the official date of report card issuance. After submission, the office will inquire of the pertinent faculty on behalf of the student, and will then convey the decision to the student. Faculty is expected to answer sincerely all questions and objections.

Reference URL

• Academic grades
http://www.doshisha.ac.jp/students/curriculum/record.html

• Regarding implementation of the GPA system
http://www.doshisha.ac.jp/students/curriculum/gpa/since2004.html

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5. Use of Class Evaluation Survey by Students

To teach is to be taught. Not many will object to this idea. As teachers evaluate students, teacher evaluation by students is also meaningful and essential for enhancement of education content. In classes like seminars, where teachers face a small number of students, interaction between the two elements is easy and natural, but in lecture classes, especially large-hall lectures with a great number of students, it is necessary to find ways for the voice of every student to be heard. To that end, Doshisha University employs class evaluation surveys by students to gather class evaluations and messages from the students. Doshisha University has been conducting "Class Evaluation Survey by Students" since the fall semester of AY 2002; the survey is currently conducted via both online and printed questionnaires.

Students evaluate the course on a five-point scale from various perspectives, including course difficulty level, progression, speed, how the teacher answers questions, and how much effort the teacher makes in course material presentation to increase student motivation to study and to facilitate understanding. There is also some free space where we receive constructive comments on how the class can be improved; this is proving extremely useful.

The survey is normally conducted half-way through the course so as to give immediate feedback to the current students based on the questionnaire answers, but it is also possible to conduct it during a latter class of the semester when the students have a grasp of the entire picture of the course so that the results are reflected in improvement for subsequent semesters, or to conduct online and other methods of questionnaire surveying during the semester as necessary; active use of such surveys is recommended.

The results of the class evaluation survey by students can be used in diverse and infinite ways. Considering the autonomy and character diversity of each faculty/school/graduate school, establishing a uniform method applicable to the entire school is both difficult and inappropriate. This is why use of results of the class evaluation survey by students in FD activities is currently left largely up to each faculty/school/graduate school, though the following two points are generally shared by the entire university as larger policies. First, with each faculty member taking the results from their class seriously, the survey results are stimulating faculty into voluntarily finding innovative and ingenious teaching methods. Second, the results are playing a major role in promoting organizational efforts by each faculty/school/graduate school to enhance and improve class content. For example, data of the class evaluation survey by students are shared by the Faculty Council members of each faculty/school/graduate school, who use it as fundamental material for organizational deliberations on promoting efforts and devising policies for class improvement by FD committees of each faculty/school/graduate school.

🌐 Reference URL

• Class Evaluation Survey by Students
http://clf.doshisha.ac.jp/evaluation/evaluation.html

TOPIC

About Education IR

Education IR

The Center for Learning Support and Faculty Development, as a node between faculties and graduate schools, carries out practical education improvement activities led by faculty members in charge of education IR. As education IR activities cover a wide range of fields, we plan and conduct surveys like "Class Evaluation Survey by Students" and "Questionnaire Survey on Campus Life" (see p.12) and engage in the development and testing of data accumulation and analysis methods in order to identify the indexes for measuring what education improvement issues are unique to Doshisha University and the level of improvement, as well as effective improvement methods.

6. Class Review by Instructor

Designing a course, creating a syllabus, moving the class along with thorough preparation and innovative ideas, then conducting stringent grade evaluations is, unfortunately, not enough. It is not enough because students who took the class want to know how the teacher felt about the class's achievement level and learning attitude, or how the teacher feels about the results of the class evaluation survey by students.

Also, by simply viewing their report card or grade distribution, students cannot understand why they received their grades. If they can learn what they could have done to earn a better grade, it heightens their motivation for future learning, and if they are unable to obtain such hints to do better, they lose opportunities to improve their learning attitude and continue making the same mistakes, or even worse, fall into the negative spiral of depending on "off-the-record guides." A student who receives a grade that is different from that of a friend in the class and does not know the reason will acquire a sense of dissatisfaction or distrust toward the grade evaluation by the teacher. Grading is not the final task.

The course is complete when and only when a communication route is established so that the teacher can give various kinds of feedback to students, not only during class, but also after grades have been announced.

It is the policy of Doshisha University to publicize on the university website review by each faculty regarding every offered course, after the end of the course period. This mechanism enables feedback to students even after a course has ended. It is naturally during the grading period that the students are most eager about receiving such feedback, so it is preferable for teachers to provide their review by that time. A review should be 2,000 characters or less on one, a few, or all of the following topics, to be chosen by the teacher, and may be disseminated via DUET.

• **Review topics**

- View of teacher regarding results of "Class Evaluation Survey by Students"
- Comments regarding and requests toward students from teacher
- Advice to students regarding future learning activities etc.
- Explanation of intent of questions on final examination and/or paper examination
- Comments on status of answers on final examination and/or paper examination
- Comments on results of experiments, practical training etc.
- Supplementary explanation on course goals, class management and/or grade evaluation standards
- Overview of final evaluation

Reference URL

• Class review by instructor
http://duet.doshisha.ac.jp/info/kohyoindex.jsp

7. Claims Committee System

Doshisha University has a Claims Committee system that receives, investigates, deliberates and resolves complaints from students regarding course content, teaching method and/or grade evaluation. The Claims Committee system was implemented in April 2004, together with the GPA system, as a part of the efforts to realize more stringent grade evaluations so as to improve the quality of undergraduate and graduate school education.

This system was implemented because although faculty is able to learn the opinions and comments of students regarding a given course through the class evaluation survey by students and is able to use such information for improvement, there are individual requests that do not easily come up in such survey format, or problems that cannot be easily resolved through direct dialogue between teacher and student. There was need for an intermediary entity, the Claims Committee, comprising Assistant Deans of faculties and graduate schools, which can listen to both sides and find solutions that lead to course improvements. The Claims Committee thus protects student privacy while protecting the students themselves from disadvantageous treatment resulting from claims filed.

Doshisha University has two types of Claims Committee: the Faculty Etc. Claims Committee for each faculty/school/graduate school/center, comprising full time faculty, and the All-School Claims Committee. Each handles matters as detailed below.

- ### The Faculty Etc. Claims Committee
  Handles the following matters (claims) filed by students
  [1] Requests for improvement regarding course content and education methods that cannot be resolved through direct communication between student and teacher
  [2] Questions and formal objections regarding grade evaluation

- ### The All-School Claims Committee
  Exchanges information and coordinates matters handled by Faculty Etc. Claims Committee, investigates and deliberates measures regarding all-school claims

The Faculty Etc. Claims Committee adheres to the following procedure in handling improvement requests from students. After submission of an improvement request by a student, the ClaimsCommittee is convened within two weeks, and the facts are investigated. Within two weeks of the Claims Committee meeting, the handling of the request will be deliberated, and the result will be communicated to the student in writing. In the case of a question or formal objection on grade evaluation, the office of the student's affiliated faculty/school/graduate school will first inquire of the teacher based on the submitted Grading Question Form (see P.45) and convey the answer to the student verbally. If the student is not satisfied with the answer and coordination by a Claims Committee is deemed necessary, the matter is reported to the Claims Committee of the faculty/school in question and the same procedure as in the case of an improvement request will be taken.

The content of the student claims can be categorized into system/curriculum, teaching method, course content and/or level, syllabus, examination procedure, examination content, grade evaluation and others. The data accumulated since implementation show that most claims concern course content and/or level, teaching method and grade evaluation. Improving these points are also important for FD.

The Claims Committee is not just an organization for complaint handling, but also an important part of FD that encourages both teachers and students to take courses seriously and provides opportunities to improve course content.
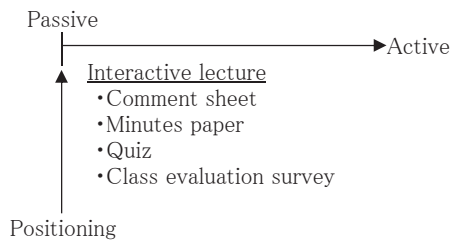
Books at the Center

The Center for Learning Support and Faculty Development collects books and materials on university reforms and FD to make available to full-time faculty and staff. Here we introduce a few terms that frequently appear in recent books on class management, with quotes from some of the books available at the center.

• Active Learning

Matsushita (2015) says "Active learning refers to learning through acting and reflection about actions. With the help of the government policy, it has rapidly spread in university education in Japan as an educational method to deal with the issues of universalization and skill development" (pp. 23-24).

Also, Mizokami (2015) defines active learning as "all kinds of proactive learning by way of going beyond the type of (passive) learning of one-way knowledge-transmission type lecture. It includes engagement in activities such as writing, speaking and making presentations, as well as externalization of the cognitive process arising from such activities" (p.32).

Structure A — One-way knowledge-transmission type lecture from teacher to students

Passive ──────────────► Active

Interactive lecture
・Comment sheet
・Minutes paper
・Quiz
・Class evaluation survey

Positioning

Structure B — One-way knowledge-transmission type lecture from teacher to students

Passive ──────────────► Active
・Discussion
・Presentation
・Peer instruction
・TBL（Team-Based-Learning）
・LTD Learning Through Discussion
・PBL（Problem-Based-Learning）
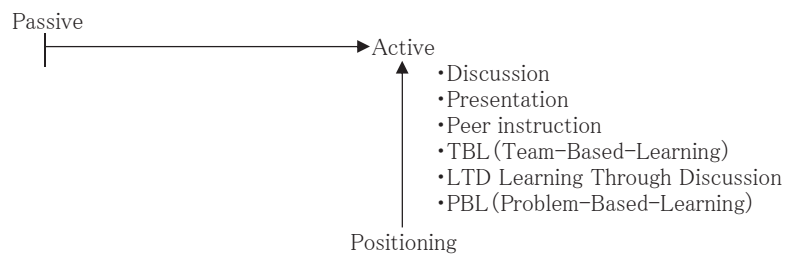
Positioning

Figure 1-1 Transition to active learning in terms of positioning

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• Backward Design

According to Mizokami (2015), "Backward design [...] firstly determines the goal of the course and then plans the individual class contents, the course progress and the method of assessment. The instructor begins the planning by deciding what learning outcome is expected in students at the end of the course, followed by what method to use for assessment and on what grounds, how to conduct each class based on that assessment plan, and what kind of learning to encourage students to do. [...] In order to lead students to advanced, multi-dimensional learning outcome, backward design is aimed at determining the learning outcome and the assessment using tools such as rubrics and portfolios before designing the class/course" (pp.39-40).

• Rubrics

According to Stevens and Levi (2013), "a rubric is a scoring tool that lays out the specific expectations for an assignment. Rubrics divide an assignment into its component parts and provide a detailed description of what constitutes acceptable or unacceptable levels of performance for each of those parts. Rubrics can be used for grading a large variety of assignments and tasks: research papers, book critiques, discussion participation, laboratory reports, portfolios, group work, oral presentations, and more" (p.3).

Rubric for Presentations

	Needs Improvement (C)	Approaching Standard (B)	Excellent (A)
Voice volume	Voice does not reach the entire classroom throughout the presentation and difficult to hear at the corner of the room.	Voice reaches the entire classroom but is difficult to hear at times.	Voice reaches the entire classroom and is easy to hear from beginning to end.
Eye contact	Student mostly does not see the audience during the presentation.	Student sometimes fail to see the audience during the presentation.	Student sees the audience throughout the presentation.
Content	Presentation is not organized in sequence and difficult to follow. Main points are unclear.	Sequence needs some improvements and presentation is difficult to follow in part. Main points are slightly unclear.	Presentation is well-organized in clear sequence and easy to follow. Main points are emphasized.
Enthusiasm	Student does not show enthusiasm and seems to carry out the presentation matter-of-factly.	Student shows some enthusiasm but not enough pursuasiveness.	Student shows sufficient enthusiasm and pursuasiveness.
Teamwork	Group lacks communication between members. One member seems to be left with all responsibilities or to carry out the presentation alone without other members' consent.	Group shows communication to some extent and cooperation between members. Some members lack enthusiasm towards the presentation.	Group shows sufficient communication and cooperation between members. All members show enthusiasm towards the presentation.
Q&A	Answers are off the mark because student does not understand questions accurately. Answers are given in an aggressive way and offending the questioners and audience.	Student understands questions accurately but answers are off the mark. Answers are sincere and communication is constructive.	Student understands questions accurately and answers are on the mark. Answers are sincere and communication is constructive.
Time	Presentation continued beyond the alloted time or ended significantly early.	Presentation ran within the alloted time but ended slightly early.	Presentation ran within the alloted time and student made the most of it.

Table based on p.136 of Sato (2010)

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Rubric for Papers

	Excellent	Competent	Not Yet Competent	Poor
Creativity and Originality	You exceed the parameters of the assignment, with original insights or a particularly engaging style.	You meet all the parameters of the assignment.	You meet most of the parameters of the assignment.	You do not meet the parameters of the assignment.
Argument	Your central argument is clear, interesting, and demonstrable (i.e., based on evidence, not opinion). The claims made in the body of your paper clearly and obviously support your central argument. Your arguments and claims reflect a robust and nuanced understanding of key ideas from this course.	Your central argument is clear and demonstrable. The claims made in the body of your paper support your central argument. Your arguments and claims reflect a solid understanding of key ideas from this course.	Your central argument is demonstrable but not entirely clear. A few of the claims made in the body of your paper do not clearly support your central argument. Your arguments and claims reflect some understanding of key ideas from this course.	Your central argument is unclear or it is not demonstrable. The claims made in the body of your paper do not support your central argument. Your arguments and claims reflect little understanding of key ideas from the course.
Evidence	The evidence you use is specific, rich, varied, and unambiguously supports your claims. Quotations and illustrations are framed effectively and explicated appropriately in the text.	The evidence you use supports your claims. Quotations and illustrations are framed reasonably effectively and explicated appropriately in the text.	Some of the evidence you use does not support your claims. Some of the quotations and illustrations are not framed effectively or explicated appropriately in the text.	Little of the evidence you use supports your claims. Few of the quotations and illustrations are framed effectively or explicated appropriately in the text.
Structure	Your ideas are presented in a logical and coherent manner throughout the paper, with strong topic sentences to guide the reader. The reader can effortlessly follow the structure of your argument.	The reader can follow the structure of your argument with very little effort.	The reader cannot always follow the structure of your argument.	The reader cannot follow the structure of your argument.
Clarity	Your sentences are concise and well crafted, and the vocabulary is precise; the reader can effortlessly discern your meaning.	The reader can discern your meaning with very little effort.	The reader cannot always discern your meaning.	The reader cannot discern your meaning.
Mechanics	There are no distracting spelling, punctuation, or grammatical errors, and quotations are all properly cited.	There are few distracting spelling, punctuation, and/or grammatical errors, and quotations are all properly cited.	There are some distracting spelling, punctuation, and/or grammatical errors, and/or some of the quotations are not properly cited.	There are significant and distracting spelling, punctuation, or grammatical errors, and/or the quotations are improperly cited.

Source: Eberly Center for Teaching Excellence, Carnegie Mellon University.

Table taken from Ambrose et al. (2010) p.236-238

Rubric for Conducting an Experiment in the Lab

	Exemplary	**Competent**	**Need Work**
Materials	All needed materials are present and entered on the lab report. The materials are appropriate for the procedure. The student is not wasteful of the materials.	All needed materials are present, but not all are entered on the lab report, or some materials are absent and must be obtained during the procedure. The materials are appropriate for the procedure.	All needed materials are not present and are not entered on the lab report. The materials are not all appropriate for the procedure and/or there are some major omissions.
Procedure	The procedure is well-designed and allows control of all variables selected. All stages of the procedure are entered on the lab report.	The procedure could be designed more efficiently, but it allows control of all variables selected. Most stages of the procedure are entered on the lab report.	The procedure does not allow control of all variables selected. Many stages of the procedure are not entered on the lab report.
Courtesy and safety	While conducting the procedure, the student is tidy, respectful of others, mindful of safety, and leaves the area clean.	While conducting the procedure, the student is mostly tidy, sometimes respectful of others, sometimes mindful of safety, and leaves the area clean only after being reminded.	While conducting the procedure, the student is untidy, not respectful of others, not mindful of safety, and leaves the area messy even after being reminded.
Purpose	Research question and hypothesis are stated clearly, and the relationship between the two is clear. The variables are selected.	Research question and hypothesis are stated, but one or both are not as clear as they might be, and/or the relationship between the two is unclear. The variables are selected.	Research question and hypothesis are not stated clearly, and the relationship between the two is unclear or absent. The variables are not selected.
Data collection	Raw data, including units, are recorded in a way that is appropriate and clear. The title of the data table is included.	Raw data, including units, are recorded, although not as clearly or appropriately as they might be. The title of the data table is included.	Raw data, including units, are not recorded appropriately and clearly. The title of the data table is not included.
Data analysis	Data are presented in ways (charts, tables, graphs) that best facilitate understanding and interpretation. Error analysis is included.	Data are presented in ways (charts, tables, graphs) that can be understood and interpreted, although not as clearly as they might be. Error analysis is included.	Data (chart, tables, graphs) are not presented clearly. Error analysis is not included.
Evaluation of experiment	The results are fully interpreted and compared with literature values. The limitations and weaknesses are discussed, and suggestions are made about how to limit or eliminate them.	The results are interpreted and compared with literature values, but not as fully as they might be. The limitations and weaknesses are discussed, but few or no suggestions are made about how to limit or eliminate them.	The results are not interpreted in a logical way or compared with literature values. The limitations and weaknesses are not discussed, nor are suggestions made about how to limit or eliminate them.

Table taken from Stevens and Levi (2013) p.115

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• Learning Portfolio

Tsuchimochi (2011) explains that "a learning portfolio is the documented process of 'Reflection + Documentation + Mentoring = Learning' as shown in the figure 'the Leaning Portfolio Model'" (p81), showing the following figure of the three elements of a learning portfolio, reflection, documentation and collaboration (which includes mentoring) (p70).
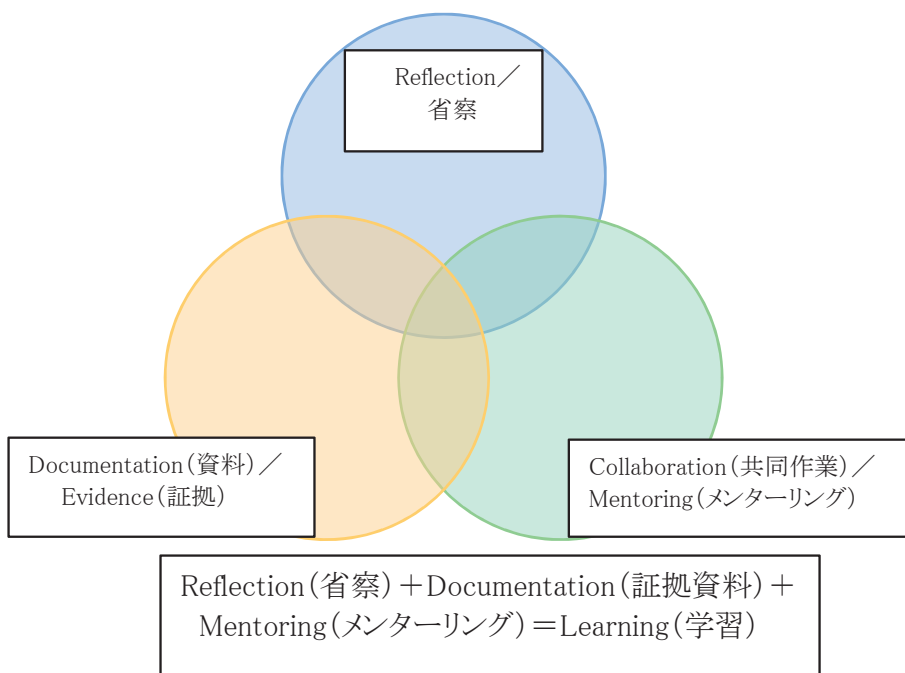
Reflection／
省察

Documentation（資料）／
Evidence（証拠）

Collaboration（共同作業）／
Mentoring（メンターリング）

Reflection（省察）＋Documentation（証拠資料）＋
Mentoring（メンターリング）＝Learning（学習）

Figure 5-35 Model of a Learning Portfoliio

Source: John Zubizarreta, The Learning Portfolio: Reflective Practice for Improving Students Learning Second Edition (San Francisco: Jossey-Bass, 2009), p.25

Figure taken from Tsuchimochi, Gary Hoichi (2011) p.81

Also, Tsuchimochi (2011) explains that "One can understand everything about a class by reading the learning portfolio of the class. In addition to learning outcome of students, it contains many hints for the teacher to improve the class" (Introduction iii).

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