How Do Distance Learners Perceive the Role of Objectives in Self-Learning Materials?

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Abstract

Printed learning materials are still the mainstay of many distance learning systems. The printed learning materials are designed for self-learning with the use of many instructional strategies. The use of learning objectives is one of these instructional strategies. Course writers at the Indira Gandhi National Open University (IGNOU) use the Bloom's Taxonomy to write objectives in behavioural terms. This article presents the results of a survey of learners' perception about the role of objectives in Self-Learning Materials (SLM). Respondents of indicated their strong preference for the use of objectives in the study materials that corroborates the views of instructional designers and course writers.

Abstrak

Bahan-bahan pengajaran bercetak masih menjadi tunggak kepada kebanyakan sistem pendidikan jarak jauh. Bahan-bahan pengajaran bercetak direka untuk pembelajaran kendiri dengan menggunakan pelbagai strategi instruksional. Kegunaan objektif pembelajaran merupakan salah satu daripada strategi instruksional. Para penulis kursus di Indira Gandhi National Open University (IGNOU) menggunakan Taksonomi Bloom untuk menulis objektif dalam istilah kelakuan. Artikel ini mempersembahkan hasil suatu soal-selidik persepsi para pelajar terhadap peranan objektif di dalam Bahan-bahan Pembelajaran Kendiri Responden.

Introduction

Printed self-learning material is the mainstay of the teaching-learning processes adopted by the Indira Gandhi National Open University (IGNOU). Since its establishment in 1985, IGNOU has been promoting the use of specially prepared distance learning materials with built in instructional features. Over the years, it has almost developed a de facto house style, sometimes called format of self-learning material that included structure, objectives, introduction, subject matter in small chunks, self-check exercises (activities), summary,

keywords, answers to self-check exercises, references, and further readings. However, very little is known about the actual use of these instructional design components of the self-learning materials. An analysis of periodical literature in distance education revealed that only 4.7% of the publications were related to design and development of learning materials (Mishra, 1997). Another review on priority areas in distance education research too indicated student's use of learning material as one of the important areas (Mishra, 1998). Mishra and Gaba (1999) research on the use of activities in self-learning materials by distance learners. Revealed that learners use activities heavily and depend on them as facilitator of learning. They use the open space, objectives, introduction, structure, etc. provided in the self-learning materials.

Explicit use of objectives in behavioural terms is one of the criteria to measure the quality of distance learning materials. Apart from helping course-writers in planning the instruction and the lesson; and providing indicators for deciding on the construction of appropriate test items for education, objectives in distance learning materials enable learners to know what is expected of them and what they must learn after studying a particular unit/ lesson. Thus, the instructional designer and the course-writer expect that the learners should make use of this critical element in the learning material. But, in reality do learners make use of objectives in distance learning materials? How do they perceive the presence of objectives in their study materials? Is there any significant difference in the pattern of usage amongst learners because of demographic variables (sex, age, prior educational background, prior experience, discipline, year of enrolment, etc.)? It is expected that this study will enrich our understanding of the use of objectives by distance learners in general and that of the learners at IGNOU, in particular.

Objectives in Distance Learning Materials

According to Phil Race (1994) the behavioural objectives used in self-learning materials perform the following functions:

- show learners exactly what they are supposed to do;
- show learners what they have achieved;
- show learners what they have yet to master;
- build their self-confidence;
- let them see why they are being asked to do things (such as self assessment questions, activities, assignments etc.); and
- allow the 'end product' of the package to be measured (Race, 1994).

Hashim (1999) analysed 50 modules of Centre for Distance Education, Universiti Sains Malaysia and found that the objectives were stated at the beginning of the module in 76% of the cases. Further, it was found that the objectives;

- were not analysed according to learning domains;
- were not arranged according to learning hierarchy;
- did not cover the overall content;
- used appropriate performance verbs;
- were stated clearly and accurately; and
- in 76% cases objectives were stated at the beginning of the module.

As identified by MacDonald-Ross (1973) there is no well-defined prescription available for devising objectives. This is a major problem faced by many course-writers. It is also difficult for people to decide whether a verb describes an observable behaviour or not (Deno & Jenkins, 1969). Deno and Jenkins asked eleven teachers to place verbs on a five-point scale from one (clearly observable action) to five (clearly unobservable states). The study revealed a great amount of variance in the rating of action verbs by teachers. It was interesting to note that even the commonly used action verbs like 'to solve', 'to apply', 'to determine', and 'to create' received more than 4 as mean. A performance verb like "to perform" received a mean score of 3 with 1.8 variance. These indicate that course writers mostly face a 'state of confusion' while deciding to use action verbs.

However, "to understand" was unanimously stated as an unobservable state by all the respondents indicate that the respondent teachers had some training on the use of action verbs in writing objectives. This is contrary to the general perception that 'understand' can pass as an action verb. Guide to writing objectives for course and units at the Monash University quotes Ramsden (1989) to state that "understanding cannot be directly observed, but is nonetheless a completely appropriate term to use in the statement of educational objectives". Course writers fall into three traps while writing objectives:

- attempting simply to restate syllabus topics using the language of objectives;
- providing vague, extremely general statements that are virtually context free; and
- limiting the statement of objectives to observable student behaviours (Ramsden, 1992).

There are two conflicting claims about behavioural objectives (Melton, 1978):

- "that behavioural objectives clearly indicate to students what is required of them, and as a result relevant learning is enhanced" (p. 291).
- "that behavioural objectives discourage students from expanding their horizons by encouraging them to confine their learning to specified objectives, and as a result incidental learning is depressed" (p. 291).

However, Melton also emphasised that the availability of behavioural objectives did not depress learning in any of the studies reviewed. He suggested that behavioural objectives might be ineffective if,

- students ignore them (with or without awareness about them)
- they are too general, ambiguous or difficult
- students are so highly motivated that the presence or absence of objectives do not matter at all.

Melton (1977, 1978) based on the analysis of research on inserted question in learning materials, suggested that:

- Behavioural objectives function as orienting or reinforcement of stimuli according to their placement in the instructional material.
- Objectives placed before instructional material (pre-objectives) function on orienting stimuli and enhance relevant learning, but depress incidental learning.
- Student performance increases overall (relevant and incidental learning combined) in case objectives are placed at the end of instructional materials (post-objectives).
- Objectives spread throughout the text increases effectiveness rather than putting them in groups at the beginning or the end of instructional material.

Distance learners' use of objectives has also been the subject of many researches. Marland et al. (1990) reported that B.Ed. students used the access structure (objectives, study guide and the table of contents) in a cursory manner to obtain an overview of what the unit is all about. However, they used objectives in a variety of other ways, such as to provide an orientation and assist the search for gist material; to check for understanding; to check for congruence between actual outcomes of study and objectives; and to assess readiness for examinations. Jegede et al., (1995) revealed that objectives were perceived by the majority of the students as useful to their studies, and that objectives are an integral part of their learning strategy. However, a study in the Open Learning Institute, Hong Kong (now Hong Kong Open University), reported that 67.1 percent of students in a science foundation course used objectives, while 66.66 percent of students in a Biology course avoided objectives at the end of each unit (Kin, 1994).

Specification of Objectives at IGNOU

Objectives are one of the essential components of self-learning materials used in distance education. These are statements of intended learning outcomes. In a learning package, how the learning outcomes are presented makes a considerable difference to how they are received by the learners. Therefore, IGNOU recommends use of objectives as 'advance organisers' before the contents are presented to the learners. Advance organisers are:

- short set of verbal or visual information;
- presented prior to learning a larger body of 'to-be-learned information'; and
- a means to generate logical relationships amongst the elements in the 'to-be-learned information' (Mayer, 1979).

The objectives presented in the beginning of each unit should be written in behavioural terms. Each objective consists of three components – term (verb) that identify what the student will do after studying the unit; standard that tells how well the student has performed; and condition under which the student's performance should be assessed (IGNOU, 2000). Behavioural objectives:

- provide guidance in planning the instruction and the unit as a help to the course writer;
- help in deciding assessment techniques; and
- enable the learners to know what they must learn or achieve in a particular unit (IGNOU, 1989).

While writing objectives in behavioural terms, care should be taken to choose appropriate action verbs. For this purpose, the use of Bloom's taxonomy (knowledge, comprehension, application, analysis, synthesis and evaluation) for the cognitive domain has been suggested. It has also been suggested that since "know", "understand", "learn", "become aware of", etc. indicate what the institution or the course writer wants to happen after a particular unit/ lesson has been studied, these should not be used (IGNOU, 1989). In other words, objectives should clearly define what the learner should be able to do after going through the unit that he/she was unable to do before: e.g. the learner should be able to distinguish between living and non-living things.

Methods

To understand the learners' perception and use of objectives, the "Learning Objectives Questionnaire" (LOQ) prepared by Jegede et al (1995) was used. The questionnaire contained questions related to the background of the learners, and their perceptions about objectives. The questionnaire was administered amongst a sample group of learners who appeared for BLS-04 (Cataloguing Theory) of the Bachelor of Library and Information Science (BLIS) Programme in the December 2003 Term-End Examination at the Indira Gandhi National Open University (IGNOU). Studies at the Dutch Open University reveal that not taking examination is not related to the quality of study materials (Kempkens, 1987; Boon et al, 1991, Valke et al, 1993). Therefore, omitting students who have not appeared in term-end examination do not compromise on the representativeness of the research sample, and conclusions can safely be generated out of the data gathered from the sample. The number of students

who appeared BLS-04 in December 2003 term-end examination was 1717 and a random sample of 320 students was sent the questionnaire by mail along with self-addressed stamped envelops to return the filled-in questionnaire. The sample size was decided in accordance with the Krejcie and Morgan (1970) table for sample size determination. The choice of BLS-04 was due to the fact that this course had the maximum number of learning objectives written in behavioural terms.

A total of 56 students responded to the questionnaire with a response rate of 17.5 percent, which is almost the same as that of the earlier study on activities by Mishra and Gaba (1999, 2001).The alpha-reliability coefficient for the perception part of the questionnaire was 0.7 with the sub-scale reliability ranging between 0.08 and 0.59. The inter-subscale reliability co-efficient was 0.66. The 35 statements on perceptions about objectives elicited responses on a five point Likert Scale of 'Strongly agree', 'Agree', 'Neutral', 'Disagree' and 'Strongly disagree' (scored 5, 4, 3, 2, 1 respectively for positive items, reverse scoring for negatively worded items).

The learning objectives questionnaire used in the study has five subscales: Read (item no. 1 to 6), Utility (item no. 7 to 13), Perception (item no. 14 to 21), Expectations (item no. 22 to 28) and Preferences (item no. 29 to 35). A correlation analysis (Table 1) amongst five sub-scales revealed six significant correlations ($p<0.01$, $p<0.05$) indicating strong internal consistency of the instrument.

Table 1 Correlation of the sub-scales in the LOQ

	Read	**Utility**	**Perception**	**Expectation**
Utility	0.088			
Perception	0.212	0.385**		
Expectation	0.162	0.305**	0.541**	
Preference	-0.039	0.291*	0.384**	0.514**

** Significant at $p<0.01$

** Significant at $p<0.05$

Results and Discussion

Characteristics of the Respondents
Table 2 shows that 57.1% females and 42.9% males responded to the questionnaire. This is in tune with the popular belief that library and information science is a feminine programme, though it could also be due to the distribution in the sample selected. The average age of the respondent was 28 years with most of the learners in the range of 21 to 30 years (Table 3). In terms of their educational background, 64.3% had post-graduate qualification at the time of

joining the BLIS programme (Table 4). Nearly 50% of the respondents (48.2%) studied a social science subjects in their highest qualification, while 25% respondents each studied humanities and natural sciences (Table 5).

Table 6 shows that 37.5% of the respondents had no experience of working in the library, while the experience of the rest ranged between 1 to 25 years. The average experience of the experienced respondents was 5 years. Also 48.2% of the respondents indicated that they have 1-5 years of experience. An overwhelming 71.4% of the respondents enrolled themselves in the year 2003 (Table 7) in the programme, followed by 2002 (19.6%) and 2001 (8.9%). As the survey was conducted taking into account the learners who appeared in the December 2003 term-end examination, Table7 is significant to note. Probably, the students who enrolled recently also preferred to respond to the questionnaire. However, it could also be due to the random sampling done on the list of students who appeared in the BLS-04 of December 2003 term-end examination.

Table 2: Gender-wise Distribution of Respondents

	Frequency	Percent
Female	32	57.1
Male	24	42.9
Total	56	100.0

Table 3: Age Group-wise Distribution of Respondents

Year Range	Frequency	Percent
21-25	24	42.9
26-30	18	32.1
31-35	7	12.5
36-40	5	8.9
41-45	1	1.8
46-60	1	1.8
Total	56	100.0

Table 4: Educational Background of Respondents

	Frequency	Percent
Graduation	36	64.3
Post-Graduation	20	35.7
Total	56	100.0

Table 5: Discipline-wise Distribution of Respondents

Disciplines	Frequency	Percent
Others	1	1.8
Social Science	27	48.2
Humanities	14	25.0
Natural Sciences	14	25.0
Total	56	100.0

Table 6: Working Experience of Respondents

Experience in years	Frequency	Percent
Nil	21	37.5
1-5	27	48.2
6-10	4	7.1
11-15	2	3.6
16-20	0	0
20-25	2	3.6
Total	56	100.0

Table 7: Year of Enrollment of Respondents

Year of Enrollment	Frequency	Percent
2003	40	71.4
2002	11	19.6
2001	5	8.9
Total	56	100.0

Use and Perception of Objectives
Each of the 56 respondents indicated how they perceived the objectives in their study materials through the 35 statements in the LOQ that has five sub-scales: read, utility, perception, expectations and preference. Table 8 shows the frequency analysis of the 35 items.

Reading of Objectives
Instructional designers expect that the learners should read the objectives. Table 8 shows that learners read the objectives as they receive the study materials (64.3%). They also indicated negatively (79.8%) to the statement – "I don't particularly read the objectives at all". They also read and re-read the objectives frequently (51.8%). At the time of assessment tasks/activities, 37.8% indicated that they read the objectives, while 42.8% indicated that they do not read particularly from the point of view of assessment.

Table 8: Frequency Distribution of Learners' Disposition towards Objectives

Sr. No.	Statements	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
1	I read objectives in my study books when I first receive the study materials	5 (8.9)	31 (55.4)	1 (1.8)	0 (0.0)	19 (33.9)
2	I read and re-read the objectives frequently	3 (5.4)	26 (46.4)	10 (17.9)	0 (0.0)	17 (30.4)
3	I refer to objectives at the beginning of each of my study sessions	0 (0.0)	27 (48.2)	8 (14.3)	0 (0.0)	21 (37.5)
4	I read objectives only because they are part of my study notes	11 (19.6)	17 (30.4)	4 (7.1)	17 (30.4)	7 (12.5)
5	I read objectives when it is time to consider assessment items	4 (7.1)	17 (30.4)	11 (19.6)	18 (32.1)	6 (10.7)
6	I don't particularly read the objectives at all	2 (3.6)	6 (10.7)	4 (7.1)	22 (39.9)	22 (39.9)
7	Objectives help guide my studies	0 (0.0)	17 (30.4)	2 (3.6)	0 (0.0)	37 (66.1)
8	Objectives serve no useful purpose in my studies	1 (1.8)	3 (5.4)	2 (3.6)	19 (33.9)	31 (55.4)
9	Objectives outline what is required by lecturers	4 (7.1)	31 (55.4)	14 (25.0)	0 (0.0)	7 (12.5)
10	Objectives restrict my learning	6 (10.7)	7 (12.5)	7 (12.5)	13 (23.2)	23 (41.1)
11	Objectives help measure my understanding of the material	0 (0.0)	29 (51.8)	3 (5.4)	0 (0.0)	24 (42.9)
12	Objectives help my motivation towards study sessions	2 (3.6)	27 (48.2)	5 (8.9)	0 (0.0)	22 (39.9)
13	Objectives serve as teaching/ learning strategy	0 (0.0)	29 (51.8)	6 (10.7)	0 (0.0)	21 (37.5)
14	Objectives are statement of minimal expectations	2 (3.6)	33 (58.9)	16 (28.6)	0 (0.0)	5 (8.9)
15	Objectives provide a general outline of the content	0 (0.0)	34 (60.7)	2 (3.6)	0 (0.0)	20 (35.7)
16	Objectives enhance my ability to learn to my full potential	2 (3.6)	32 (57.1)	5 (8.9)	0 (0.0)	17 (30.4)
17	Objectives are for lecturers, not for students	0 (0.0)	2 (3.6)	2 (3.6)	19 (33.9)	33 (58.9)
18	Objectives are guidelines to maximum performance	2 (3.6)	29 (51.8)	10 (17.9)	0 (0.0)	15 (26.8)

Table 8 (*continued*)

Sr. No.	Statements	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
19	Objectives are hurdles to be crossed	3 (5.4)	7 (12.5)	23 (41.1)	18 (32.1)	5 (8.9)
20	It is necessary to include objectives in instructional materials	1 (1.8)	28 (50.0)	4 (7.1)	0 (0.0)	23 (41.1)
21	Objectives are most useful if placed at the end of my study book	13 (23.2)	13 (23.2)	5 (8.9)	15 (26.8)	10 (17.9)
22	I expect learning objectives to be stated at the beginning of my study materials	0 (0.0)	30 (53.6)	7 (12.5)	0 (0.0)	16 (28.6)
23	I expect objectives to specify goals that can be achieved	1 (1.8)	32 (57.1)	7 (12.5)	0 (0.0)	16 (28.6)
24	I expect content to comprehensively relate to the objectives in the study book	1 (1.8)	30 (53.6)	11 (19.6)	0 (0.0)	14 (25.0)
25	I expect objectives to help me judge my understanding of the material	1 (1.8)	32 (57.1)	6 (10.7)	0 (0.0)	17 (30.4)
26	I expect objectives to motivate me towards my study	2 (3.6)	32 (57.1)	3 (5.4)	0 (0.0)	19 (33.9)
27	I expect objectives to be written in terms of specific student performances or competences	4 (7.1)	26 (46.4)	19 (33.9)	0 (0.0)	7 (12.5)
28	I would be allowed to set my objectives as I progress through the various parts of my study book	15 (26.8)	25 (44.6)	10 (17.9)	5 (8.9)	1 (1.8)
29	I would prefer to set my own objectives for the units I am studying	7 (12.5)	29 (51.8)	11 (19.6)	6 (10.7)	3 (5.4)
30	I would prefer not to have objectives in my study books	1 (1.8)	2 (3.6)	6 (10.7)	19 (33.9)	28 (50.0)
31	I particularly like objectives	0 (0.0)	34 (60.7)	5 (8.9)	0 (0.0)	17 (30.4)
32	I would prefer other guides in addition to objectives	1 (1.8)	34 (60.7)	5 (8.9)	0 (0.0)	16 (28.6)
33	I like to have objectives only at the beginning of the study book	3 (5.4)	31 (55.4)	8 (14.3)	0 (0.0)	14 (25.0)
34	I like objectives to be located at the beginning, during and at the end of my study book	5 (8.9)	35 (62.5)	13 (23.2)	0 (0.0)	3 (5.4)
35	I would prefer other forms of guides (e.g. graphic organizer, concept maps) to objectives	0 (0.0)	33 (58.9)	6 (10.7)	0 (0.0)	17 (30.4)

(*Figures in bracket indicate percentage*)

Utility of Objectives: There are different types of utility of objectives ranging from orienting the learners towards specific learning points to assess the progress of learning. Interestingly 66.1% of the respondents strongly believed that objectives do not guide their studies, though 89.3% also stated that objectives serve useful purpose in studies (statement 8). Learners also believe that objectives are expectations stated by the teachers (62.5%). More than 50% of respondents consider the utility of objectives as motivator of studies, though about 40% also strongly disagreed in this aspect. 51.8% of respondents consider objectives as a teaching/learning strategy and 63.3% consider that objectives do not restrict their learning (statement 10). This is contrary to the belief that objectives restrict learning only to relevant learning, and incidental learning does not occur. Though 42.8% of the respondents do not read objectives before attempting assessment tasks, they consider objectives as a helpful measure (57.8%) to understand the material.

Perception of Objectives: Perceptions affect our behaviour at sub-conscious level, and how we perceive an external object is directly related to our usage of the same. The questionnaire included eight statements related to this aspect. The responses to items 14 and 18 indicate that objectives are mainly statement of minimal expectations, and thus encourage "surface learning approach as opposed to the much desired deep learning approach" (Jegede et al, 1995). Only 41% of the respondents do not consider objectives as "hurdles to be crossed". Interestingly statement 19 has the highest (41.1%) undecided responses, meaning respondents were not clear whether objectives are hurdles or facilitators of learning. 92.8% of respondents indicated that objectives are meant for the learners, and 51.8% thought that it is necessary to include objectives in the study materials.

Expectations of Objectives: Teachers expect that the learners should use objectives. We should also know what the learners expect of the objectives.

The respondents stated the following expectations:

- specify achievable goals (58.9%)
- relate comprehensively to the content (55.4%)
- help to judge understanding of material (58.9%)
- motivate towards study (60.4%)
- written in terms of student performance (53.5%)

71.4% of the respondents indicated that they would expect that objectives should be set by the learners as they progress in their studies. This is in fact, an encouraging finding that the learners are interested beyond what is given to them.

Preference of Objectives

What the learners prefer or like about the objectives? 60.7% indicated they just like objectives, while 64.3% indicated that they would prefer to set their own objectives while studying. At the same time, 33.9% disagreed and 50% strongly disagreed to the statement – "I would prefer not to have objectives in my study books". So, they all prefer objectives in their study materials. Respondents also indicated they prefer other guides in addition to objectives (62.5%), and they particularly like graphic organisers, concept maps etc. in place of objectives (58.9%).

Placement of Objectives

There are four items on the placement of objectives in the questionnaire (statement 21, 22, 33 and 34). 53.6% of the respondents expect objectives at the beginning of the study materials while 60.8% like them only at the beginning. Interestingly, 46.4% stated that objectives at the end of the study unit would be most useful, while 44.7% stated in contrary to this favouring objectives to be useful, if placed at the beginning. The choice of objectives in the beginning could be attributed to the learners' acquaintance with them. However, the perception that objectives at the end would be more useful (46.4%) is significant to note for the instructional designers. Also 71.4% of the respondents stated that they like the objectives to be located at the beginning, during and at the end of the study units. These findings are indications of the learners' disposition towards alternative formats of learning materials and placement of objectives in different ways.

Analysis of Variance (ANOVA)

To understand, if there are any significant relationships between the demographic variables and learner's disposition to the use of objectives, six one-way analyses of variance was conducted (Table 9).

Table 9: ANOVA for Demographic Variable vs. Learners Disposition towards Objectives

Variables	Sums of Squares	df	Mean Square	F	Sig.
Gender	0.529	1	0.529	3.774	0.057
Age	2.701	5	0.540	5.004*	0.001
Educational Qualification	0.028	1	0.028	0.185	0.669
Subject/Discipline	1.242	3	0.414	3.140*	0.033
Working Experience	1.485	4	0.371	2.863*	0.032
Year of Enrolment	0.115	3	0.038	0.250	0.861

* Significant at $p<0.05$

Comparison of differences in the means through analysis of variance (ANOVA) revealed that at 95% confidence level ($p<0.05$) three variables (age, discipline and work experience) were significant. In other words, age of the learner,

discipline studied and experience influenced the perceptions of learners significantly. As for the experience, the significance can be attributed to the 37.5% who had no experience at all. Table 9 also reveals that gender, educational qualification and year of enrolment do not matter in relation to how the learners view and use objectives in their study materials.

Conclusion

A typical distance learner is a mature adult learner, mostly employed. In this study also the average age was 28 and 63.5% had some work experience. Such learners have very little time (say a couple of hours) to attend to studies at the end of the day. Therefore, they would require guidance on how to make effective use of their available time. This is something that cognitive psychologists describe as meta-cognition, and the revised Bloom's taxonomy (Anderson et al, 2000) includes meta-cognitive knowledge in one dimension of the taxonomy table. Objectives could also support the meta-cognition process. Respondents of this study indicated their strong preference for use of objectives in the study materials that corroborates the views of instructional designers and course writers on objectives in study materials. The learners are aware of the importance of objectives in their learning process and read them frequently though not always before assessment tasks. Learners use objectives as a measure of their understanding of the study materials, and consider it as a motivator to learn. This goes fairly well with the concept of reinforcement in self-assessment. The respondents also indicated their preference for placing objectives differently, and therefore this study indicates towards re-examination of the place of objectives in the study materials. It may be suggested that the findings of Melton's (1977, 1978) analysis can be of great help to instructional designers to spread the objectives all over the learning materials rather than putting them at the beginning or at the end in a bulk.

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