
Input Versus Instruction -- Facilitating Successful Task Completion in the EFL Classroom

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Abstract

The authors set out to determine whether input, instruction, or a combination of both would best facilitate successful task completion within a 50-minute class session. By having the students attempt information gap tasks and contrasting the performance of those who (1) received instruction on how the task could be accomplished with (2) students who were provided with instruction and task-related input and with (3) students who were provided with input but no instruction, the authors determined that a combination of input and instruction was most effective in facilitating successful task completion.

Introduction

To the confusion of classroom practitioners, the last 30 years have seen applied linguists arguing what seem to be contradictory positions on issues fundamental to second language acquisition. That strong arguments have been made and seemingly incompatible stances taken on such crucial questions as ‘Does form-focused instruction make a significant, positive contribution to second language learning?’ and ‘Is exposure alone (inside or outside of the classroom) adequate for successful language acquisition?’ is an indication that the field of ELT is shifting and that a clearly defined new dominant paradigm has not yet emerged.

Amongst advocates of a task-based approach to language teaching, a consensus seems to be forming that both an explicit language focus component and comprehensible input play a role in driving forward language acquisition. The research set out to test the hypothesis that a combination of input and a language focus is more effective than either one of these components alone. To test this hypothesis three native speakers of English in the Department of English Language and Literature at Chongju University in North Chung-chong province, South Korea, cooperated in conducting classroom-based research to determine the extent to which successful task completion could be facilitated by providing students with input, a language focus component, or an admixture of both — the end goal being to facilitate successful task completion within a task-based instruction (TBI) framework.

Given that TBI is becoming increasingly popular within Korean university classrooms, that instructors have a limited amount of classroom time, and that failure to successfully complete the task may have a demotivating effect on the students, an attempt to determine how to facilitate successful task completion is a worthwhile pursuit. For the purposes of this study we have isolated one segment of a possible task cycle: between a pre-task and a task the instructor has an opportunity to provide students with input, instruction, or a combination of both. We will refer to this segment of the task cycle as the 'inter-task' stage. The question being pursued is what form the inter-task should take in order to best facilitate task completion.

The Instruction Versus Input Question

The question of whether instruction contributes to language learning at all is one that has been asked repeatedly since at least the mid-seventies. With the argument being made that second language acquisition is input-driven (Krashen, 1981; Krashen, 1982; Krashen and Terrell 1983), the necessity of form-focused language instruction ceased to be a given.

Krashen and Seliger (1975) argue that learners who acquire languages without the benefit of formal instruction are still instructed in the sense of being self-taught. Self-instruction, including the study of grammatical rules, is taken to be a form of instruction and is used to explain learners' success. Krashen later argues that formal instruction has a limited role to play, contributing only to learning and not to acquisition (Krashen, 1981, p. 50).

Conducting a review of several studies and concluding with the claim that instruction is "good for you", Long (1983, 379-380) writes:

Instruction appears to be especially useful in the early stages of SLA and/or in acquisition-poor environments, but neither of these conditions is necessary for its effects to show up. Further, there is some slight evidence that larger proportions of instruction are helpful in cases of instruction and exposure, but the evidence is only slight.

Lightbown and Spada (1993, p. 105) are less reticent in supporting a combination of form-focused instruction and input:

Classroom data from a number of studies offer support for the view that form-focused instruction and corrective feedback provided within the context of a communicative program are more effective in promoting second language learning than programs which are limited to an exclusive emphasis on accuracy on the one hand or an exclusive emphasis on fluency on the other.

Many of the studies which attempt to determine the effects of formal instruction, reviewed in Long (1983), conduct their research by interviewing learners about prior learning experiences and compare the amount of instruction learners claim to have received to learners' level of second language acquisition. Imprecise measures like years of schooling, amount of English learners claim is spoken at home, learning environment, and number of other first language (L1) speakers with which learners interact result in researchers basing their conclusions on very questionable data. The researchers in the studies reviewed by Long often attempted to account for learners' success without accounting for other environmental factors (for example: economic class or parental attitudes towards language learning).

The researchers in the present study have attempted to measure not language acquisition over time, but change in language performance within a 50-minute class session. By using action research, random groupings of students with the same major, and by measuring change in performance rather than level of ability we manage to reduce the importance of environmental factors and increase the likelihood that success is a result of whether instruction or input was provided. Of course, this type of research leads to a new set of possible criticisms which we readily acknowledge. We do not claim to be measuring language acquisition. Our goal is simply to measure performance with the view that there is some relationship between successful communication and second language acquisition.

Prior to undertaking the action research project described below the authors, based upon their review of the literature and theories of second language acquisition, proposed the following hypotheses:

Hypotheses One: An inter-task segment which contains only language focus without input will increase the accuracy of learners' responses but create the least increase in number of responses.

Hypotheses Two: an inter-task segment which contains only input will increase the number of responses but create the least increase in accuracy.

Hypotheses Three: a combination of input and language focus will lead to the greatest increase in accuracy and number of responses.

The Study

Procedure

Students from six classes were involved in the study. All were either English majors or enrolled in an EFL course designed for English majors at Chongju University. The classes included 32 students enrolled in the nighttime 'beginning' level course, 50 students enrolled in the daytime 'beginning' level course, and 46 students enrolled in the daytime 'intermediate' level course.

Students were asked to self-select partners and to sit approximately one meter away from their partner, facing each other. Each pair was then assigned a group (one, two, or three). They were told that they would be taking part in an experiment and asked to be especially careful to speak only English for the duration of the experiment.

In order to measure the effects of input versus instruction on students within a 50 minute class, the researchers designed two, almost identical exercises. Each of the exercises involved an information-gap with the information exchange being two-way, cooperative, and convergent. Each partner was given a map containing the names of stores. Their partners' maps contained the location of the stores. Students were asked to take turns asking for directions, from a starting point, to the stores listed. Once located they were to indicate the building believed to be the correct location by marking it with a letter or number. Each map contained ten locations to be requested and ten locations to be explained. The exercise was loosely based upon one found on pages 33 and 86 of *Fifty-Fifty Book One* (Wilson and Barnard, 1998). Students were given ten minutes to complete the task.

Students attempted the first task (Task A) and after their sheets were collected, they were then asked to go, with their partners, to three separate rooms. While in these separate classrooms they were given what we are calling 'inter-task' instruction. *Group One* was instructed on language that was used by the native speakers to complete the pre-task but did not listen to the tape or read the script. *Group Two* listened to the tape after having their attention drawn to specific aspects of language used in the tape. *Group Three* was invited to read a script and listen to a tape of native speakers completing the same pre-task which the students had just attempted. No discussion of the script or tape took place. Each group received inter-task input, instruction, or both for exactly the same amount of time (ten minutes). The groups were then reassembled and given a similar task (Task B).

The Task B worksheets, collected at the end of the ten minutes, were assigned three scores: '*number*', '*correct*', and '*accuracy*'. The first score, called *number* throughout this article, was determined by the number of answers marked on the worksheet. The second score, called *correct* throughout this article, refers to the number of correct answers marked on the worksheet (**note:** number will always be higher than correct for each pair). The third score, called *accuracy* refers to the percentage of number that was correct. The scores for each group were tallied for Task A and Task B and from these scores a third set of scores were calculated (*difference*). Each score for Task A was subtracted from the same students' corresponding score for Task B arriving at the difference in *number*, *correct*, and *accuracy*. This third set of scores is taken to represent the change in that student's performance as a result of both practice and instruction.

For each group then there are 9 scores:

Task A Number	Task B Number	Difference Number
Task A Correct	Task B Correct	Difference Correct
Task A Accuracy	Task B Accuracy	Difference Accuracy

Weaknesses of the Method

Before continuing it is worth acknowledging that there is a limit to what we can claim based upon an analysis of these scores. In any type of research involving human-driven data there are certain difficulties in ascertaining whether data represents what it is claimed to represent. This study is no exception. The researchers recognize that the study has a number of weaknesses stemming both from the method of data collection used (tasks) and the difficulty of using external data (task success) to measure what are essentially internal processes (student learning).

Tasks, including the information gap activity used in this research, require partners to negotiate meaning, clarify their own speech, and interpret their partners' speech in order to successfully accomplish the task. To a large extent, within a task-based framework, task outcome is the first measure of success. With this precept of task-based learning there is a dilemma in that the language used to accomplish the task becomes secondary to successful completion of the task itself.

The use of task success as the measure of language learning in this study opens the door to some very valid criticisms. While the researchers did circulate to ensure that learners were not compromising the study by using their L1 or showing the maps to their partner, the researchers did not attempt to record or correct learner errors. As the pairs were not recorded it becomes impossible to know with certainty whether or not Korean (the students' L1) was occasionally used to accomplish the tasks. Nor is it known: whether the learners communicated accurately and/or fluently with one another; whether the phrases taught in the language focus components were used in their correct form, if used at all; or if the learners' interlanguage changed. Learners may have been relying on *strategic competence* in order to accomplish the task. In other words, the students may have used a number of strategies which allowed them to avoid solving linguistic problems (Skehan, 1996, p. 21). In addition, as, at the time of writing, there has been no follow-up to the initial study, no arguments for permanence can be made.

Within a task cycle instructors would attempt to balance the tasks' emphasis on meaning over form by including a report stage. The researchers, focusing only on a segment of a possible task cycle, made no attempt to ascertain what was going on in the learner's mind. There was no report stage, no interview, and no post-activity questionnaire. The omission of a report stage, essential to the TBI cycle, meant that groups were not able to share or reflect upon how they performed the activity.

Other problems may have arisen due to learners' expectancy about language learning and classroom procedure and research. The learners' expectations of what should happen in the classroom may have skewed the results. While the learners are familiar with the researchers as instructors, and are acquainted with information gap activities, this study introduced teaching styles which may be unfamiliar to them. The combination of explanation and input may more closely resemble the teaching style with which learners are familiar.

Learners may also have had expectations about the purpose and results the researchers were seeking and reacted accordingly. Each group was aware that they were part of an experiment. The specific details and purposes of the experiment were not explained to the learners, however, knowing that their performance was being monitored may have caused learners to try harder, particularly if they predicted that they were in a group expected to succeed.

The desirability to leave the same amount of time between pre-task and the task stage meant that instruction took place simultaneously by different instructors. Each group was familiar with the researcher, however, the extent to which an 'instructor effect' could have affected results cannot be known. Instructors attempted to reduce the instructor effect by presenting the language focus component in identical terms.

Results

Tabulation of Task A scores (Table 1), the scores achieved prior to any instruction, for all three levels (beginners daytime, beginners nighttime, and intermediate daytime) reveals that on average students randomly assigned to Group Two had the lowest percentage of accurate answers — having the most answers given and the fewest answers correct.

The three groups, having been moved to separate classrooms and simultaneously provided with inter-task instruction, returned to the first classroom to complete Task B (Table 2). All three groups showed some improvement on all three scores. As no control group was used, it is impossible to state the extent to which this improvement could be considered a practice effect. Should a larger group of students become available, a control group may be formed in future studies. Group Two, however, is now the group with not only the highest mean number of answers recorded (*number*), but also the highest mean number of correct answers given (*correct*). They do not have the highest mean percentage of correct answers given (*accuracy*) as Group One and Group Three have given fewer answers but with a higher degree of accuracy.

Table 1

Task A mean scores for three classes.

A Scores	Group 1	Group 2	Group 3
Number	4.05	4.21	3.95
Correct	3.25	3.38	3.45
Accuracy	89.07	74.80	86.60

Table 2

Task B mean scores for three classes.

B Scores	Group 1	Group 2	Group 3
Number	6.09	6.55	5.95
Correct	5.64	5.98	3.45
Accuracy	89.99	89.42	95.08

Table 3Difference between Task A and B
average scores for three classes.

Difference	Group 1	Group 2	Group 3
Number	2.05	2.33	2.00
Correct	2.11	2.60	2.18
Accuracy	0.93	14.62	8.48

While these scores alone are of interest it is the difference between Task A and Task B scores (Table 3), which is calculated by subtracting Task A scores from Task B scores and then calculating the mean difference for each score, that is considered to be most relevant here. The difference between students' performance is intended as a measure of the extent to which each pair of students improved in their ability to accurately exchange information.

Group One, the group which received ten minutes of instruction on grammar, vocabulary, and phrases felt to be useful, to the surprise of the researchers showed the least improvement in accuracy (0.93%). It was expected by the researchers that this group, having conscious knowledge of how accurate information could be exchanged, would activate their 'monitors' and show the least improvement in *number* but the greatest increase in the number of correct answers given, thereby having the greatest increase in *accuracy*.

Group Three, the group which received ten minutes of input, both written and oral, had an 8.48% improvement in accuracy. Again, this result surprised the researchers. It was expected that an inter-task component comprised of input alone would lead to an increase in *number* but a decrease in *accuracy*.

Group Two, the group which received a combination of language-focused instruction and input, produced the results expected by the researchers, benefiting the most from the inter-task segment. Their difference in number, correct, and accuracy scores were higher than either of the other two groups.

Examination of the median scores for all three groups revealed remarkably similar scores. Group Two's greater success was accounted for by the gains made by both high and low learners. The gains made by median learners in Group Two were unremarkable. The instruction-only group (Group One) saw the greatest increases being made by the learners who initially received fair to high scores on Task A. The input-only group (Group Three) saw the greatest increases being made by students who initially received poor to fair scores on Task A. It should also be noted that, while on average all groups advanced, it was only in Groups One and Three that some pairs received lower scores on the second task. Judging from this data, a combination of input and instruction might be especially preferable in mixed ability classes.

Of the three hypotheses which the researchers proposed at the beginning of the study only one is supported by the data. *Hypothesis One*, that language focus without input would increase *accuracy* of learners' responses but create the least increase in *number*, was not supported; Group 1's increase in *accuracy* was less than either of the other two groups. *Hypothesis Two*, that an inter-task segment which contains only input would increase the *number* of responses but create the least increase in *accuracy*, was likewise not supported. *Hypothesis Three*, however, that a combination of input and language focus would lead to the greatest increase in *accuracy* and *number* was supported by the data.

Interpretation of Results

Krashen's view of the direct teaching of language was not entirely negative as he did see some positive roles for instruction. Memorized chunks of language (routines and patterns) were seen by Krashen to be capable of making an indirect contribution to language acquisition if they could be used to secure more input. Krashen and Terrell (1983, p. 43) write:

Even though routines and patterns are not of direct benefit to language acquisition or to language learning, they may be of considerable indirect benefit ... Correctly used, routines and patterns can help acquirers gain more input and 'manage conversations'.

The perceived dangers of making the teaching of grammatical rules central to language teaching are worth consideration but the possibility of a language focus which recognizes and accounts for Krashen's critique exists. As the language focus component of our study did not dwell extensively on the teaching of the rules of grammar, but instead primarily introduced vocabulary and phrases used by the native speakers to accomplish the task (even with the group which did not hear the native speaker input) the language focus might have been quite pedagogically correct and made a positive contribution to learners' success without contradicting the acquisition/learning hypothesis (also called the dual-mode hypothesis). This could explain some of the success of Group Two but could not explain the relative lack of success of Group One nor Group Three's limited success.

Advocates of TBI recognize that form cannot be completely de-emphasized lest fossilization occur when a learner's interlanguage reaches a level in which successful transactional communication is regularly achieved despite the presence of obvious grammatical errors which do not interfere with communication. There is, however, a possibility of a language focus component in the task cycle making a more direct and immediate contribution to language acquisition in that a language focus segment could increase the chances of language forms being 'noticed'. Noticing occurs when learners, paying conscious attention to the input, notice the presence or absence of certain forms (Batstone, 1996, p. 273). While the term 'noticing' is often applied to the intake of grammar it may be broadened to include larger chunks of language including set phrases, routines, and patterns. The combination of form-focused instruction prior to the introduction of input may have focused the learners' attention upon forms which contributed to their successful intake of these forms.

The learner, encountering the input, needs to process a number of features, some more and some less relevant. "Input contains many alternative features for processing, and the learner's task is to extract relevant features which can then be focused upon fruitfully" (Skehan, 1998, p. 49). The instructor's task may be to not only provide input but to guide learners to relevant features within it.

If comprehensible, meaningful, and relevant input is believed to be the driving force behind second language acquisition then the challenge for learners becomes to process the input available to them. The role of the teacher could be to provide students with input, make that input more comprehensible, and provide it in such a way and time that its meaningfulness and relevance are emphasized. This role may involve focus on form when the teacher feels that some meaningful and relevant features of the input are likely to elude the learners. Describing how instruction can contribute to input processing, Skehan writes: "Instruction can work in a more complex way by making salient the less obvious aspects of the input, so that it is the learner who does the extraction and focusing, but as a function of how he or she has been prepared" (Skehan, 1998, p. 49). Conscious learning may, therefore, make an

indirect contribution to second language acquisition if it improves learners' ability to process input.

A language focus section could be used not only to prevent fossilization in the long term but also to increase the extent to which input is processed successfully. Language focus need not equal the analysis, isolation, presentation, and/or explanation of selected grammatical forms. Language focus may involve directing the students attention towards useful routines and patterns, clarifying complex or idiomatic language which may distract learners attention from input, and making input more comprehensible through the activation of known vocabulary and the previewing of unknown vocabulary. The focus on grammar could be limited to that small subset of rules of English which a learner might be expected to apply without slowing output and which are deemed to make aspects of the input more meaningful. By focusing learners' ability to recognize aspects of input which could contribute to successful task completion, instructors could increase learners' ability to process input for meaning. In short, what is desired is an attempt at language focus which, rather than distracting the learners' attention from input, enhances it.

While the raw input created when two fluent English speakers attempt a selected task and are recorded doing so may not have been completely comprehensible, and while any language focus section reduces the amount of classroom time available for input, a language focus section could be used to optimize input. Explanation could make input more comprehensible, items of relevance could be highlighted, and the methods which the recorded fluent English-speakers used to manage their conversation pointed out. All this could be done without imposing a selected grammatical structure upon the speakers or overemphasizing a particular structure which occurs in slightly higher than normal proportions in the input.

It is believed by the researchers that the success of Group Two was due to the increased ability to process input gained when that input was preceded by language instruction. The performance of Group Three, the input-only group, improved to a lesser degree due to their inability to make complete sense of the input. Group One, the instruction-only group, improved the least due to the limited amount of input which they received. Without input to process they were entirely dependent upon the teacher to predict the language which they needed to complete the task. Input provides the learners with the opportunity to fill the gaps in their own knowledge with a greater degree of individualization and freedom. The form-focused instruction without input denies the learner that freedom. The combination of input and form-focussed instruction is most effective as it allows the teacher to remove the comprehension barriers which might prevent the learner from effectively processing the input.

While further research is called for, these preliminary results suggest that a classroom which provides either input or instruction exclusively will be less

successful than one which attempts to provide a balance of input and instruction. Further research which uses a control group, while finding a way to further reduce the instructor effect, and more closely monitoring how students accomplish the task is required to substantiate these results. It would also be of interest to determine whether students' level of language proficiency is a significant variable which may lead to different results.

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Appendix 1: Partial Transcript of Native Speakers Performing Task A

G -- a native English-speaking professor

N -- a native English-speaking professor

- N: Um, excuse me, could you tell me where Joe's Video is?
G: Oh, Joe's video. Uh, that's far. You'll have to go three blocks up Second Avenue...
N: Okay.
G: ...then when you get to Bates Avenue...
N: Uh-huh.
G: take a right...
N: Uh-huh.
G: ...and go two blocks...
N: Uh-huh.
G: ...and then Joe's Video is on the left. Um, on the corner of Bates Avenue and Water Street.
N: Okay. Bates and, what, that's three blocks and then a right?
G: Yeah.
N: And then another two blocks and its on the left is that right?
G: Right. On the Northwest corner...
N: OK
G: ... of Bates Avenue and Water street.
N: Okay. Well if I can't find it, I'll get somewhere else. Thanks.
- ***
- G: Uh, could you tell me how to get to Gulliver's Travels from here?
N: Oh, its just down here. Um, down here on High Street. Go about a block and it'll be just after the intersection.
G: Okay.
N: Uh, across from the Baseball diamond.
G: Across from the Baseball diamond?
N: Or across from Black's Pharmacy.
G: So, it's next to the church?
N: That's right. If you get to the church, you've gone too far. It's just before the church.
G: Before the church.
N: Right.
G: Okay.
- ***
- N: Um, excuse me could you tell me where I could find Sneaker's Shoes?
G: Sneaker's Shoes? Yeah, that's easy. Um, just walk up Second Avenue ...
N: Mm-hm.
G: ... for one, two blocks ...
N: Mm-hm
G: ... and then just half a block more.
N: Okay.
G: Um, it's on the corner, uh, of Lang Road and Second Avenue.
N: Oh, okay.
G: On the Northwest corner.
N: Northwest corner. Okay.
G: Yeah, right on the corner.
N: Okay, so that's two, just, two blocks and then a bit more.
G: Yeah. It's on your left, on the Northwest corner of Lang Avenue - Lang Road and Second Avenue.
N: Okay. Got that. Thanks
G: No problem.
- ***
- G: Uh, excuse me. Could you tell me how to get to Zoom Camera Repair?
N: Zoom Camera Repair. Um, actually, just go down High Street a couple of blocks and you'll find it on the left. It's on the corner of High Street and Water Street.
G: Okay.
N: So, uh, it's actually right beside, uh, ... Erik's Pizza.
G: Right beside Erik's Pizza. Yeah, I know where that is.
N: Oh, okay, good.
G: Okay.
N: Uh, right. So it's just two blocks down there.
G: Okay. And across from the baseball diamond?
N: Yeah. That's right.
G: Yeah. Okay.

N: Um, excuse me, could you tell me how to get to Colleen's Cafe?
G: Colleen's Cafe? That's, uh, just up Second Avenue here, uh, about one and a half blocks, uh, between, uh, Hope and Lang Street. Um, yeah, it's- if you go up here for, yeah, a block and a half it's on your right.
N: On my right?
G: Yeah, just across from, uh, the hospital, actually.
N: Okay. Uh, I don't know where the hospital is.
G: Oh, that's, that's right on the corner of Hope, ah, Hope Street and Second Avenue.
N: I see.
G: So it's just up there. Yeah, if you get to Lang Road, you've gone too far.
N: Okay. So, before Lang, before Lang Road ...
G: Yeah, that's right.
N: ... on Second Avenue ...
G: That's right.
N: ... past Hope Street.
G: That's right.
N: Okay. I think I've got it.

G: Um, excuse me, could you tell me where the Megabucks Theatre is?
N: Megabucks Theatre. Okay go up Second Avenue ...
G: Mm-hm.
N: ... for three blocks ...
G: Mm-hm.
N: ... turn right ...
G: Mm-hm.
N: ... go for one block ...
G: 'Kay, one block.
N: ... and on the corner of Middle Avenue and Bates Avenue.
G: Okay.
N: On the right, is Megabucks Theatre.
G: Okay, so that's up three blocks this way on Second Avenue

N: Yeah.
G: ... and then I turn right ...
N: Turn right.
G: ... and then it's the next street over?
N: Yeah.
G: And so I just go one block over and it's on the left?
N: It's on the right.
G: Oh, Okay.
N: It's on the corner Middle Avenue and Bates Avenue.
G: Oh, okay. Middle Avenue and Bates. Okay, thank you.
N: No problem.

G: Uh, excuse me could you tell me how to get to City Department Store from here?
N: City Department Store. Okay, that's a bit of a trip. Um, you could probably go down Second Avenue for about three blocks and then turn right and go two blocks it's on the corner I guess just in front of the park um so it'll be right on the corner on the left.
G: Is that across from the park?
N: Um ... it's really it's where it's in front of the park
G: In front of the park?
N: Yeah, so the park's in behind the Department Store. Um if you ... if you're walking along the street, um, and you get to the park, you should probably turn back. Oh yeah, just go up Second Avenue here second you second Avenue here and yeah it's ... turn on to Bates and go about two blocks.
G: Okay, two blocks on Bates Avenue?
N: Right.
G: So its on the corner of Water and Bates?
N: That's right. Yeah.
G: Okay. And it's on the ... on my left.
N: Right.
G: Okay.
N: That's correct.
G: Thanks.

Appendix 2 – Complete Tables of Statistics

Task A Scores		Group 1	Group 2	Group 3
Number	Mean	4.05	4.21	3.95
	Mode	5	5	4
	Median	4	4	2 and 5*
	High	9	8	7
	Low	1	2	1
	Range	9	7	7
	Standard Deviation	1.78	1.54	1.83
Correct	Mean	3.52	3.38	3.45
	Mode	4	4	5
	Median	3	3	4
	High	7	8	7
	Low	0	0	0
	Range	8	9	8
	Standard Deviation	1.47	2.00	1.79
Accuracy	Mean	89.07	74.80	86.60
	Mode	100	100	100
	Median	100	100	100
	High	100	100	100
	Low	0	0	0
	Range	101	101	101
	Standard Deviation	19.95	33.14	21.67

* multiple modes exist

Task B Scores		Group 1	Group 2	Group 3
Number	Mean	6.09	6.55	5.95
	Mode	6	6	4 and 7*
	Median	6	6	7
	High	10	10	10
	Low	2	4	2
	Range	9	7	9
	Standard Deviation	2.07	1.62	1.97
Correct	Mean	5.64	5.98	5.63
	Mode	6	5	4
	Median	6	6	6
	High	10	10	10
	Low	0	1	2
	Range	11	10	9
	Standard Deviation	2.36	2.14	2.01
Accuracy	Mean	89.99	89.42	95.08
	Mode	100	100	100
	Median	100	100	100
	High	100	100	100
	Low	0	25	50
	Range	101	76	51
	Standard Deviation	18.96	18.46	12.45

* multiple modes exist

Difference Scores		Group 1	Group 2	Group 3
Number	Mean	2.05	2.33	2.00
	Mode	2	2	2
	Median	2	2	2
	High	5	7	8
	Low	-1	0	-2
	Range	7	8	11
	Standard Deviation	1.58	1.63	2.00
Correct	Mean	2.11	2.60	2.18
	Mode	2	5	3
	Median	2	3	3
	High	6	8	8
	Low	-2	-1	-2
	Range	9	10	11
	Standard Deviation	1.76	2.22	2.17
Accuracy	Mean	00.93	14.62	08.48
	Mode	0	0	0
	Median	0	0	0
	High	67.77	100	100
	Low	-100	-41.66	-50
	Range	168.77	142.66	151
	Standard Deviation	25.57	35.47	24.97

