# In-Class Motivation of Individual Language Learners in Thailand: An Exploration of Change, Stability and Context in a Dynamic System

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**Abstract:** *The purpose of this study was to investigate in-class motivation of language learners' as a dynamic system in terms of change, stability and context. Mixed methods were used to conduct research, which employed a Motometer, observations and a questionnaire to collect the quantitative and qualitative data. The Motometer provided the quantitative data for in-class motivational development of four upper secondary English language learners studying in the same language class of an English Program in Thailand. The classroom observations provided contextual information on the external factors affecting the language learners, and the questionnaire provided the internal factors. The qualitative data were used to explore the motivational development found.The findings indicated in-class motivation is a dynamic system and motivational development was individualistic. The implications are two-fold. First, it suggests motivation should be researched at the individual level, and as a dynamic system in the context in which it occurs, to gain a deeper understanding of the processes involved. Second, the Motometer is an instrument that can be used to track motivational changes over time and if applied to lessons and lesson planning may result in improved levels of in-class motivation.*

**Keywords:** Motivation, Dynamic Systems, Pedagogy, Classroom-based research

## Background of the study

"Motivation is responsible for why people decide to do something, how long they are willing to sustain the activity, and how hard they are going to pursue it" (Dörnyei & Ushioda, 2011, p. 4). In the real world, motivation is significant because it produces outcomes, "[i]t is therefore of preeminent concern to those in roles such as manager, teacher, religious leader, coach, health care provider, and parent that involve mobilizing others to act" (Ryan & Deci, 2000, p. 69). Second language (L2) motivation research is a well-developed and generally unique field of research that considers specific social, psychological, behavioral, and cultural complexities that second language acquisition involves (Dörnyei & Ushioda, 2011).

Most recently, "researchers have been focusing increasingly on the dynamic and changeable nature of the motivation process" (Waninge, Dörnyei, & De Bot, 2014, p. 1). This has led to a 'dynamic turn' with motivation currently being considered as a dynamic system from a new theoretical perspective, Dynamic Systems Theory (DST). The fundamental concept of DST is that a dynamic system fluctuates between states of change and stability over time, being pushed and pulled from one state to the next by both the internal and external context simultaneously . In order to understand the development of a dynamic system Larsen-Freeman (2006) stated the phenomenon under study needs to be examined in the context that it occurs naturally; for instance, the motivation of language learners should be studied in the learners' language classroom.

Change in motivation over time at the classroom level has been reported at the group level in several motivation studies (e.g., Gardner, Masgoret, Tennant, and Mihic (2004); Hotho (2000); Pawlak (2012); Poupore (2013)). Waninge, Dörnyei, and De Bot (2014) specifically researched L2 motivation from a dynamic perspective at the individual level for young language learners of French and German at a high school in the Netherlands. The findings demonstrated "how motivation changes over time on an individual level, while also being characterized by predictable and stable phases, and how it is inseparable from the learner's individual learning context" (Waninge et al., 2014, p. 704). In addition, it found that the average group level of motivational development did not match that of the motivational development of the participants.

There has been limited research on individual in-class motivation as a dynamic system. More research should be conducted to provide additional support as stressed by Creswell (2014) because research value increases when the results can apply broadly rather than just one setting. This is particularly relevant in L2 research where the development of theories need to consider multiple factors, such as, the language studied, the learning establishment, the country studied, the culture of that country, and the age of the students. In consideration of these factors, individual in-class motivation as a dynamic system was researched for the language of English in the country of Thailand with upper secondary English program students. This group was chosen to provide a contrast to the original study in the Netherlands of young learners in terms of language (English), culture (Thailand), learning establishment (English Program) and age of the participants (16-17 years old). Therefore, this study attempts to investigate in-class motivation of individual language learners in Thailand in terms of change, stability and context in a dynamic system. The objective of the research is to provide further empirical evidence to support the broader notion of language learners' in-class motivation being a dynamic system. In addition, there are pedagogical implications as having these findings in mind allows the teacher to prepare appropriate classroom activities/simulations that promote/develop/enhance optimal learning.

**Conceptual Framework**

The conceptual framework of this research study was based on Waninge et al. (2014) who investigated motivational dynamics from the core principles of dynamic systems of change, stability, and context.

Change, as described by Waninge et al. (2014), refers to a continuously changeable state. State is the position of the system at a specified moment, for instance, the motivation level of a student when a new activity is introduced. Change can be linear or nonlinear.

Stable states can exist in system behavior, e.g., the same motivation level is recorded for a period of time. These states occur because dynamic systems self-organize. As a result of this self-organizing the system behaviour can settle into preferred states known as attractor states, "An attractor state simply describes what a system is doing right now or how it is currently acting, and the outcome or pattern it has fallen into through self-organization" (Hiver, 2015, p. 25).

Context regards the language classroom's learning environment (external factors) and individual learner's behaviour (internal factors), the individual's output will be influenced by varied layers of contextual influences, for example, behaviors of friends and classmates, or actions by the teacher. These contextual factors can play a leading role in directing (pulling and pushing) a system toward or away from a particular state that a few of them cannot be meaningfully detached from the dynamics of the system as a whole, thus forming an integral part of the system (Verspoor, Lowie, & Dijk, 2008).

**Related Research**

Change in motivational development over time has been recorded in several research studies at group level. Gardner et al. (2004) studied the changes in language attitudes, motivation, and anxiety levels that occurred during an academic year instruction in an L2. The participants were 197 university students who studied French as a L2 and were tested on six separate occasions during the academic year in their scheduled L2 class. At the first session participants completed an attitude/motivation test battery (AMTB) questionnaire. For four consecutive sessions, conducted in different months, participants answered questions on their state motivation and state anxiety halfway through each class. In the final session participants completed the AMTB questionnaire again. For the measurement of state motivation, students were presented with a picture of a thermometer labelled at the bottom with 'low' and at the top 'high'. Participants were asked to draw a single horizontal line from the bottom to indicate their overall level of motivation during that L2 class based on three reflections; their level of effort, wanting to learn, and enjoyment of the experience. Additionally, the participants were given state motivation items that assessed how motivated participants felt during that L2 class. The results demonstrated group stability in motivational intensity during the academic year, although there were some examples of change but not statistically significant.

Pawlak (2012) researched motivational dynamics by tracing change over time in respect to tasks performed, the objectives and structure of each class, and the participants' motives to sustain effort to learn English. The sample consisted of 28 Polish students in senior high school. The study took place over a four week period in English classes taught by the participants' regular teacher. A variety of instruments were used to obtain the data necessary for the study; a motivational questionnaire, interviews, a motivational grid, an evaluation sheet, and a questionnaire for the teacher. The motivational grid was a self-reporting instrument that saw participants mark their levels of interest and engagement every five minutes during a lesson. At the start of every five-minute interval a pre-recorded beep was used to cue participants to make an entry on the grid on a scale of 1 (low) to 7 (high). A space was provided for additional comments by the participants. The results of the research demonstrated that group' motivation can change over the course of a lesson.

Hotho (2000) explored if significant differences exist between learners of different foreign languages (French, German, and Spanish) in respect of motivation-related (motivational) factors and if time played an important factor in this. The study consisted of 55 participants who were studying one of the foreign languages. Most of the participants were aged between 18 and 25. The study took place over a single semester of 12 weeks and participants were required to complete an identical questionnaire several times over this duration. The questionnaire contained items on motivation-related components rated on seven-point Likert scales. The results concluded that over a 12-week period learner motivation was comparatively stable. However, some motivational fluctuations and shifts occurred all the way through the weeks.

Poupore (2013) studied task motivation through a complexity theory lens. The participants were 30 Korean English learners on an English conversation course. The participants had an average age of 30.6 years. A total of 15 tasks were designed for the research study and administered during the English conversation classes. Pre-task, during-task, and post-task motivation questionnaires were administered to record the dynamism of the participants' task motivation. The results of the group data demonstrated in two of the 15 tasks that overall motivation decreased.

Waninge et al. (2014) investigated the individual differences of L2 learners' motivation dynamics from a DST perspective of change, stability, and context. The longitudinal classroom-orientated study of young learners (12-13 years old) consisted of six observed lessons, three each for Spanish and German respectively. Several instruments were used to collect the data for analysis: a Motometer, an observation form and a questionnaire. The results showed that motivation over the course of a lesson for each individual experienced temporal changes as well as stability and these were inextricably linked to the learning environment.

**Research questions**

In respect of the purpose of study the research questions are as follows:

1. Is variability shown in the individual's in-class motivation?
2. Is there stability, or attractor state, shown in the individual's in-class motivation?
3. If there is detectable variability and stability found in the individual's motivation, can the classroom context account for it?

**Method**

A convergent parallel mixed-method design (Creswell, 2013) described by Creswell (2013) as "a research approach, popular in the social, behavioral, and health sciences, in which researchers collect, analyze, and integrate both quantitative and qualitative data in a single study or in a sustained long-term program of inquiry to address their research questions" (p.6). The rationale for this approach was twofold, a need for different more complete understandings, and to explain quantitative results. The quantitative data collected recorded the participants' motivational development using an instrument called a Motometer. Additional quantitative data and qualitative data recorded internal contextual factors using an attitude/feeling questionnaire and external contextual factors through non-participant class observation. The results were combined to explain or clarify motivational development.

For the purpose of the research purposive sampling was used to select the school, the teacher and the class for the study. Following the selection, purposive sampling was further applied to select four students in their fourth year of secondary school attending the same English class. The sample represented a broad cross-section of the language class. A limit of four participants was set to facilitate observations. Motivation levels were taken every five minutes over six English language classes. The length of a typical English class was scheduled for sixty minutes. Data collection started when the teacher commenced teaching. The researcher acted as a nonparticipant observer and documented observed classroom activities and events focusing on the four participants. After the final observation the participants were given a questionnaire on attitudes/feelings toward the English class and the teacher.

**Instruments**

Three instruments were used to collect the data in the classroom: an adapted Motometer was used to collect the participants' motivation level, an adapted observation form collected the contextual data (external factors), and an adapted attitude/feelings questionnaire collected further contextual data (internal factors).

The adapted Motometer (Figure 1), originally used by Waninge et al. (2014), was used to collect the quantitative data by taking a series of motivation measurements of the participants over each observed lesson.

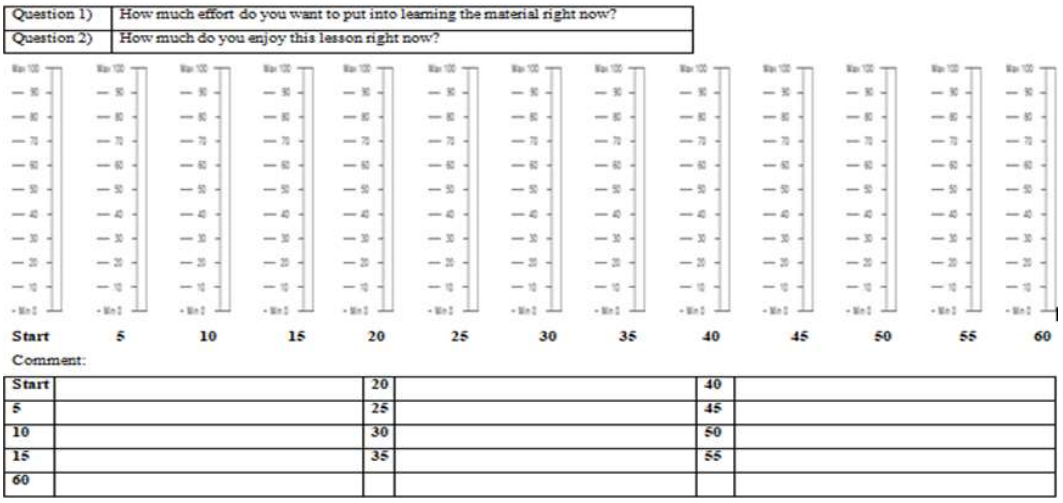


Figure 1 Example of Adapted Motometer

The adapted Motometer was given to the participants at the start of each observation. It consisted of 13 identically shaped scales marked at the bottom with a 'Min 0' representing the lowest point of a participants' motivation and a 'Max 100' at the top of the scale representing the highest level of motivation a participant could have. Time was displayed below each scale, starting at 0 minutes for the first reading and ending at 60 minutes representing the end of a complete hour of English instruction. The participants indicated their motivation level by drawing a horizontal line across the scale. The initial recording at zero minutes was completed following a soft bell sound provided by the researcher. Subsequently, the participants recorded their motivation levels again on the following scale prompted by a repeat of the same soft bell sound five minutes after the initial sound. This process continued at five minute intervals until the end of the lesson. The adapted Motometer defined motivation as 'How much effort do I want to put into learning the material right now', and 'How much do I enjoy this lesson right now'. In addition, below the scales' time, a corresponding time marked comment section allowed participants to make any short comments on their current motivation level. Waninge et al. (2014) credit the original Motometer to Gardner et al. (2004), although they adapted it from a single state recording instrument to an instrument that could record variation over a lesson similar to Pawlak's (2012) motivational grid.

An adapted classroom observation form, based on the observation protocol of Waninge et al. (2014), was used to collect the qualitative external contextual data. At the top of the classroom observation form there is an individual section that records basic observational information about the name of the school, teacher, subject, class, date, observer, observation class (e.g., 1, 2, 3..), seating diagram and page number. Underneath this section is a table that consists of four columns: time, activity/task, time, and event. When a classroom activity was observed by the researcher, the time was written in the first time column followed by a brief description of the activity/task, for example, course-book activity. When the researcher observed an event the time was recorded in the second time column and a short-written description was given, for example, participant asks the teacher a question. Events were specifically focused on the participants. At the end of the classroom observation a reflection form was given to the participants and the teacher. This form allowed the participants and the teacher to briefly reflect on the class with a maximum word limit of 25. This provided additional qualitative data on the

external contextual environment. To improve the reliability of the observation notes, video was recorded for each observation and triangulated with the observation data.

The adapted questionnaire, Cronbach's Alpha 0.907, was based on the original questionnaire used by Waninge et al. (2014) and was used to collect the quantitative and qualitative internal contextual data. The translated version was kindly supplied by F. Waninge, the original researcher, and permission was granted for its adaption and use. The adapted questionnaire had 30 items given on a Likert 10 point scale with items ranging from 'completely disagree' (1) to 'completely agree' (10). Twenty items were directly related to the students' attitudes toward the language courses, including eight items on enjoyment of the language class, e.g., 'I make an effort in this English class for the teacher'. Eight items on linguistic self-confidence, e.g., 'I often have a feeling of success in this English class.', and four items on classroom anxiety, e.g., 'I'm afraid my classmates will laugh at me when I make a mistake'. The last ten questionnaire items were related to student's feelings and attitudes towards the language teacher, e.g., 'My teacher's instruction is clear'. These items produced quantitative data on the internal contextual environment. At the end of the questionnaire four open questions were given with a 25-word limit maximum. These questions produced qualitative data that gave insight into the participants' motivational influences, such as, 'What influences your motivation to learn English in this class?' and 'What could your teacher do to increase your motivation on the Motometer in this class?'

**Data collection**

A pilot lesson was held with the class, the participants and the teacher. This allowed the participants to practice using the Motometer and discuss with the researcher any misunderstandings or issues that were present. In addition, it allowed the class and the teacher to become more familiar with the presence of a nonparticipant observer in the classroom and with the presence of a video camera. Video was recorded from the beginning of the observation lesson until the end. Participants were asked to self-report motivation on the Motometer once the observation commenced, and this was signalled by a soft bell sound. Every five minutes after the initial recording the soft bell sound repeated and the participants marked their level of motivation on the Motometer for that particular time recording. Participants returned the Motometer at the end of the pilot observation and then were given the opportunity to make any retrospective comments on the observed lesson on the reflection form. The teacher was also given this opportunity. For all of the six observations the same procedure was repeated. At the end of the final observation session (observation lesson 6) the participants were given the attitudes/feelings questionnaire to be completed at home. These were returned to the researcher via the teacher.

**Data analysis**

A composite table was created to map the contextual qualitative data to the quantitative data for each observation Figure 2.

To create the composite table these steps were followed. Step 1 provided the Motometer data as a numeric value. The resulting data was entered on Excel to create data sets for each participant for each observation lesson. Graphs were created from the datasets to give a quick visual representation of motivational development. Step 2 saw the classroom observation data coded in chronological order from the raw observation data for each participant for each observation. Step 3 combined the data from step 1 and step 2 into one large composite table

organized by periods of 5 minute intervals. Step 4 added the comments made by participants on the Motometer to their respective reading position of when the comment was made. Step 5 added the reflections from the participants and the teacher to the bottom of the table.

| | Participant 1 | Participant 2 | Participant 3 | Participant 4 |
|---|---|---|---|---|
| Comment | ready to study | | | tired from last class |
| Reading 0 - 0 minutes | 66 | 50 | 50 | 70 |
| Period 1 | Teacher gives information on homework. | Participant talks with teacher. | Teacher gives information on homework. | Teacher gives information on homework. |
| Observations | Teacher requests focus/noise reduction. | Teacher gives information on homework. | Participant demonstrates surprise. | Teacher requests focus/noise reduction. |
| | Student misbehaviour. | Participant demonstrates surprise. | Participant asks teacher question. | Participant moves from seat. |
| | Teacher hands out worksheet. | Teacher requests focus/noise reduction. | Teacher requests focus/noise reduction. | Participant moves back to seat. |
| | | Teacher hands out worksheet. | Participant raises hand. | Student misbehaviour. |
| | | | Participant gives information to teacher. | Teacher hands out worksheet. |
| | | | Teacher hands out worksheet. | |
| | Worksheet (Past simple/Past continuous). Teacher goes through worksheet with class. Class question and answer. Student question and answer. | Worksheet (Past simple/Past continuous). Teacher goes through worksheet with class. Class question and answer. Student question and answer. | Worksheet (Past simple/Past continuous). Teacher goes through worksheet with class. Class question and answer. Student question and answer. | Worksheet (Past simple/Past continuous). Teacher goes through worksheet with class. Class question and answer. Student question and answer. |
| | Participant interaction with other student - class work | Participant checks work with student. | Participant asks particpant question. | |
| | | Participant checks work with student. | Particpant interacts with student. | Participant asks question to student. |
| | | | Participant requests teacher's attention. | Participant on phone. |
| | | | Participant makes a joke. | |
| Comment | | | | I can't catch up with the class |
| Reading 1 - 5 minutes | 70 | 50 | 70 | 40 |
| Increase/(Decrease) | 4 | 0 | 20 | (30) |

Figure 2 Snapshot of the composite table

The resulting steps created six composite tables that showed the overall picture of motivational development for each participant over each observation. Figure 2 provides a snapshot of the composite table for the period 0 to period 1, e.g., the initial Motometer reading to the second reading at 5 minutes. The composite table has five columns. The first column holds the headings: Comment, Reading no. and Time, Period no. and Observations. The next four columns represent the four participants. Below each participant is the collected data from the instruments described and includes the coded observations in chronological order in the period they occurred, Motometer comments, and reflections are included at the end of the composite chart for each participant.

In addition, the results of the attitudes/feelings questionnaire were analysed in Excel and described qualitatively with a score of six or above seen as high, between six and four as average and below four as low. The results were used to explain or clarify some aspects of the motivational dynamics observed.

## Ethical consideration

To meet the ethical considerations the school, the teacher, and the participants were given pseudonyms. In addition, the researcher explained the purpose of the research and the procedures to the school, the director, the administrators, the teachers, and the observed class. Permission to do the research was sought and granted by the school director before the research occurred. The participants were given consent forms which explained they could stop participation in the research at any time and research was postponed until all were returned and signed by the participants' parents or guardians.

## Findings

In regards to research question 1, the findings revealed variability (change) in the participants' motivational development over the course of each observation. These variations were apparent even on a short timescale of five minute intervals over the course of a single

lesson. Changes at times were minimal and at others significant and sometimes predictable and at others not. This variable system development was observed for all six observations. The variations were unique to each participant and did not match that of the group average motivational development. For example, for observation 1 the average motivational development (Figure 3) showed that motivation overall decreased. However, when looking at the individual motivational development (Figure 4) the data showed that participant 1 ended the observation with lower motivation, participant 2's motivation level remained unchanged, participant 3 ended with a higher motivation level and participant 4 ended with significantly lower motivation. This individuality was true for all six observations and is consistent with the results of previous study by Waninge et al. (2014).

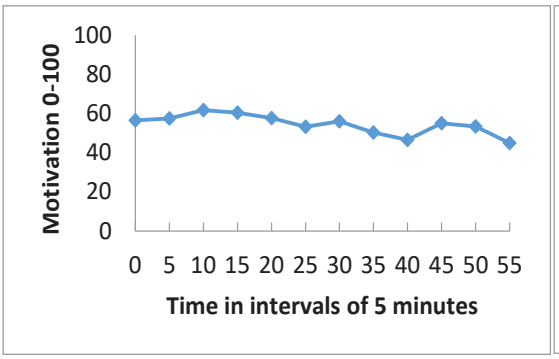


Figure 3 Avg. Motivational Development

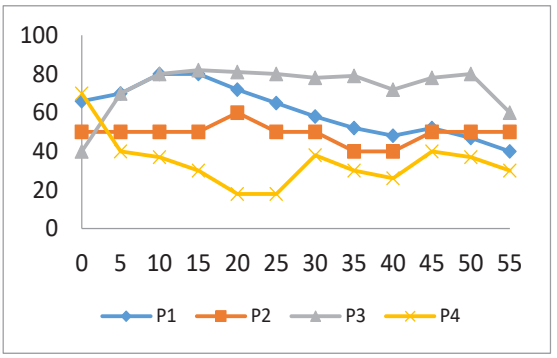


Figure 4 Ind. Motivational Development

In regards to research question 2, the findings also indicated the presence of stability, or attractor state, in the participants' motivational development. Unlike variability it was not always present for each participant over the six observations. However, all participants at one point in the observations experienced a period of stability in their motivational development as shown in the Table 1. Participant 2 (P2) had the greatest number of episodes followed by participant 1 (P1), participant 3 (P3) and participant 4 (P4) respectively.

Table 1 Occurrences of stability in participants' motivational development by observation

| | Obs. 1 | Obs. 2 | Obs. 3 | Obs. 4 | Obs. 5 | Obs. 6 |
|---|---|---|---|---|---|---|
| P1 | 1 | 0 | 1 | 2 | 0 | 1 |
| P2 | 4 | 2 | 3 | 3 | 2 | 3 |
| P3 | 0 | 0 | 1 | 0 | 0 | 1 |
| P4 | 1 | - | 0 | 0 | 0 | 0 |

Note. Observation 2 (Obs. 2) P4 was absent. Observation 3 and 5, P4 started late.

For research question 3, the qualitative data indicated in most cases that context (internal and external factors) was linked to the variability seen in the quantitative data, e.g. internal factors + external factors = motivational development. However, the analysis of the contextual information highlighted the fact that the participants' motivational systems were individual and developed uniquely where the same input produced very different motivational development for each participant. The individual system developments in most cases could be traced back to a combination of internal and external factors. The data collected was incredibly rich and space

limitations limit the findings to a few salient points that highlight the interrelatedness of context to motivational development.

Following the introduction of an activity (external factor) the findings indicated interest in the activity (internal factor) or interest in the content of the activity influenced motivational development of the participants. Interest was seen as a strong factor in the system that affected development positively if it was sufficient, or negatively if it was insufficient. Interest could also produce nonlinear behavior when part of a conglomerate of factors that amplified its influence. This can be seen in Figure 5 which shows the motivational development for P2 for observation 2.

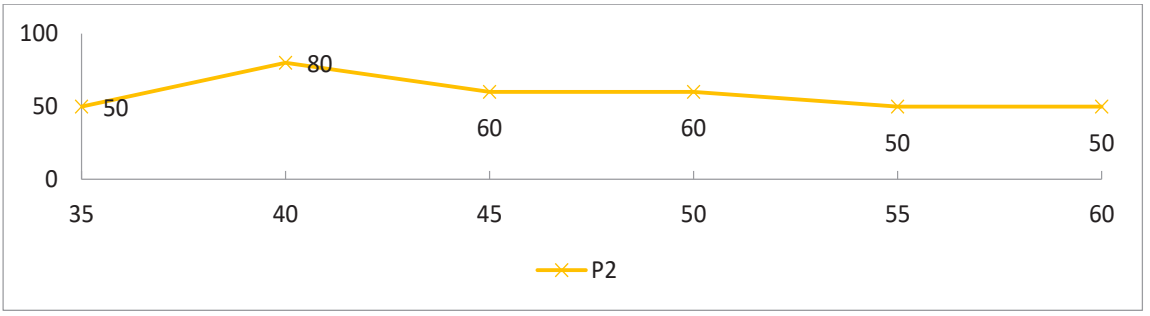


Figure 5 Observation 2 Motivational Development - Participant 2

Motivation increased from 50 at the 35 minute mark to 80 at the 40 minute mark. The factor interest (in the content of the activity) was present as indicated by P2's Motometer comment, "I love Halloween". In addition to interest, during this period P2 got to share a personal experience they had of Halloween in another country and the combination of these factors may have produced the nonlinear behavior witnessed.

Participants' motivational influences, as described by the participants in the attitudes/questionnaire open questions, would often govern the effect of interest on motivational development. For example, Figure 6 shows the motivational development for observation 2. A video documentary (external factor) was introduced at the 50 minute mark. P1's motivation increased based on interest in the content (internal factor), "Halloween legend. I love it". P2's motivation remained stable. P3's motivation dropped as suggested by their motivational influences (internal factor) response which suggested motivation would decrease if videos were shown as they found them boring.

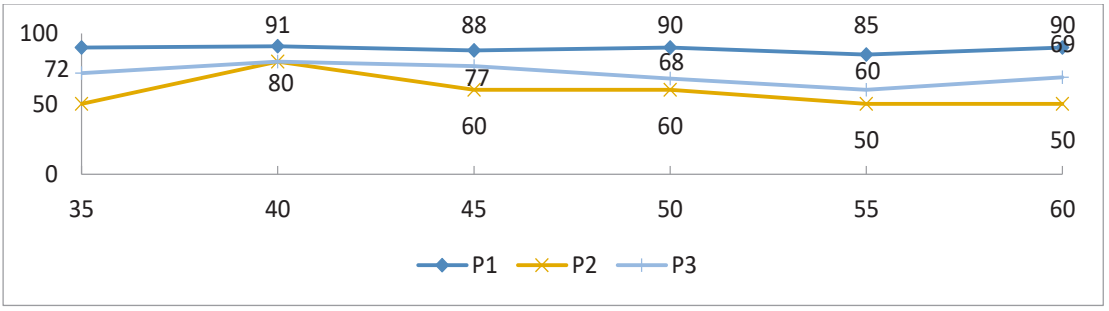


Figure 6 Observation 2 Motivational Development - Participant 1, 2 and 3

Noise (external factor) was also identified as a strong factor for P1 and P3 that would influence motivational decline if it was present for too long or was too much. For example,

Figure 7 shows P1's motivation fell from the 25 minute mark subject to noise issues in class and lack of interest as reported by the participant, "It was kind of interesting at the beginning of class because everyone was paying attention to the teacher. But then, it was starting to get noisy as the class was getting boring. I myself also feel it a little boring".

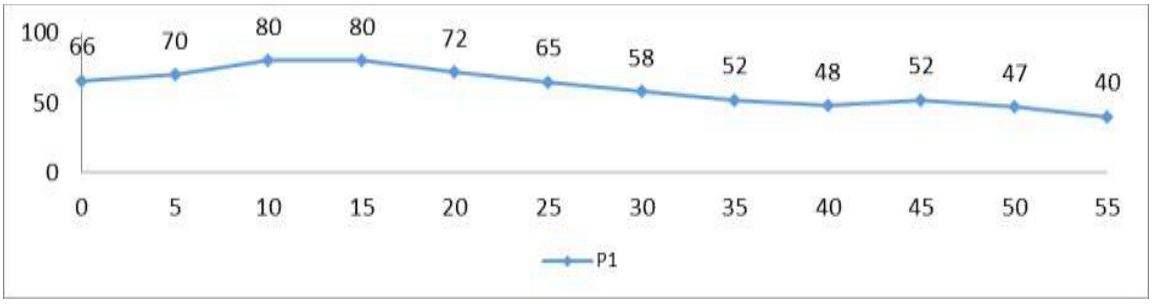


Figure 7 Observation 1 Motivational Development - Participant 1

On another occasion, the data for P1 suggested P1 had interest in a subject but motivation declined due to noise issues showing that noise can overcome positive interest in an activity. Interestingly, the data for P2 and P4 suggested noise seemed to act as a stable factor that had minimal effect on development.

The observation data also indicated a feeling of success (internal factor) acted as a strong factor. Figure 8 shows the motivational development of P2 and P3 for observation 3. In the first period, P2 and P3 received their test scores (external factor) back from the teacher. P3 experienced this feeling of success based on their test results which helped them maintain high motivation levels for the rest of the observation as supported by P3's comment, "Today, My teacher gave me back the quiz. I was very happy because I've got 9.5 out ten".

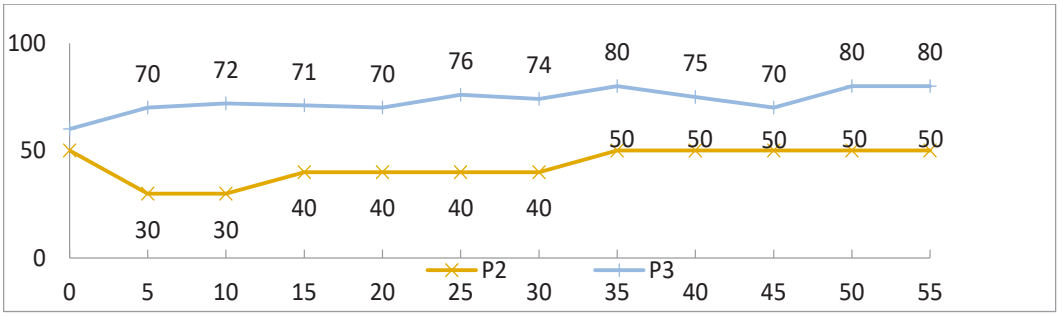


Figure 8 Observation 3 Motivational Development - Participant 2 and 3

In contrast, motivation dropped for P2 because of poor performance in the test, "feel bad about my quiz". This reaction was possibly caused by their lack of confidence as they had reported a low feeling of success in class, and felt they would not get a good grade in English for the year. This lack of confidence from the resulting test score suggests motivational development was affected for several periods before P2 reported "feel better" at the 15 minute mark and motivation rose. In both cases this factor had a temporal influence.

A further example of this temporal aspect was also seen for P1 and P2 in observation 6. They were affected by something before the start of an observation and this had an effect on their

motivational development for the whole observation as shown in Figure 9. This suggests, in addition to the temporal aspect of some factors in-class motivation can also be influenced beyond the scope of the classroom by previous out-of-context events.

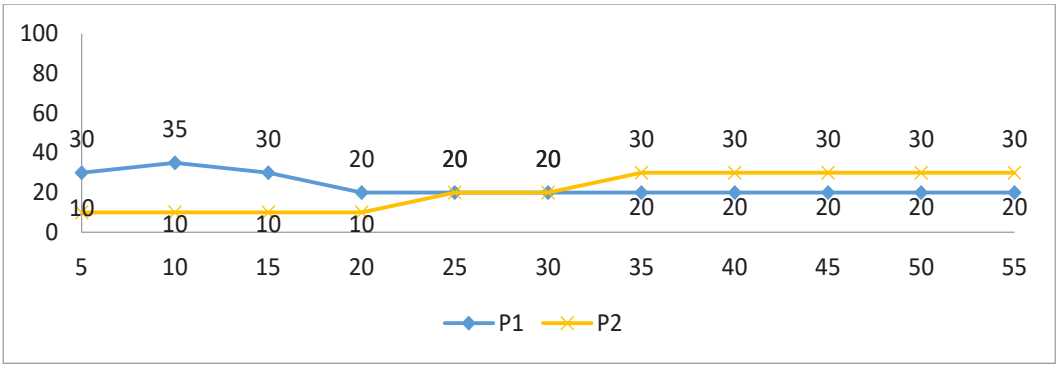


Figure 9 Observation 6 Motivational Development – Participant 1 and 2

**Discussion**

The findings for this study of secondary school Thai language learners at an EP school when compared to study of young language learners by Waninge et al. (2014) indicated that L2 in-class motivation may be seen as a dynamic system and it is not dependent on the age of the participant, the L2 studied, the type of school, or the culture. System behavior in respect to the interrelated nature of context was demonstrated to have individual differences in motivational development suggesting that motivation should be researched at the individual level, and context cannot be separated from the system itself and, as Larsen-Freeman (2006) suggested, should to be examined in the context that it occurs naturally. In addition, the findings of this research study indicate that studying motivation from the group level would not account for the individual differences found in motivational development and may be misleading.

This research study suggests that motivation seen as a dynamic system may provide a deeper understanding of motivation and its development. As a result, a dynamic system view may provide answers to previously unexplainable phenomenon. In addition, it also shows that motivation can be studied at varying timescales, which in the case of this research was at 5 minute intervals over the course of a lesson.

The pedagogical implications for taking a dynamic system perspective of in-class motivation, "can help understand language classroom problems and issues and suggest how to intervene to improve learning" (Cameron & Larsen-Freeman, 2007, p. 12). Teachers' motivational awareness can be raised to help develop motivational strategies for lessons that may lead to positive motivational development of the students and reduce or control the potential of negative motivational development factors that may affect them.

As a result, it suggests the Motometer may be used as a simple but effective tool by teachers to understand motivational development of their lessons. To do this a teacher would require sufficient copies of the Motometer, a timer with sound (phone app), and a simple activities observation form which records classroom activities and the time that they happen. On completion of the Motometer by the selected participants the teacher would collect them and enter them into Excel. A single graph would be created from the created data sets showing all the participants' motivational development over the lesson. The teacher would then map the recorded activities to the corresponding time on the graph. The visual results would indicate any

positive and negative motivational developments over the lesson allowing for future motivationally aware lesson planning.

This study had several limitations. One of the participants was absent for one of the observations and arrived late for another. In addition, the same participant was not present for part of an observation as they were taking a test in another location. One observation started late following an in-class exam. The Motometer was self-reported by the participants, and the observation data was subject to interpretation for cognitive states.

As a teacher and a researcher, I would like to see future research progress in two directions. First, research could be done to identify strong factors and conglomerates of factors identifiable for in-class motivation and these should be ranked in terms of the motivational force they generate and for how long the force is generated for. Awareness of these could lead to better lesson planning and help teachers make informed in-class decisions that help keep students suitably motivated. Second, action research could be done using the instrument of the Motometer to produce a compendium of successful positive motivational development activities and strategies (including extrinsic rewards) used by different teachers. This could help new and old teachers alike to produce motivationally effective second language lessons.

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