

UNIVERSITY OF JYVÄSKYLÄ

A MATTER OF PERSPECTIVE:

The cognitive style Field Independence - Dependence, and why it matters

Bachelor's thesis

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<p>Tiivistelmä – Abstract</p> <p>Psykologi Herman Witkin aloitti vuonna 1948 kognitiivista ajattelutapaa tutkivan suuntauksen, jossa ihmiset jaettiin kahteen ryhmään: kenttäriippuvaisiin ja kenttäriippumattomiin. Kenttäriippumattomuutta ja -riippuvaisuutta on tutkittu aina 2010 luvulle saakka. Kansainvälisiä tutkimustuloksia löytyy aiheeseen liittyen runsaastikin, mutta Suomessa aihetta ei ole juurikaan tutkittu soveltavan kielitieteen näkökulmasta. Tutkimukset kenttäriippuvaisuudesta ja -riippumattomuudesta antavat viitteitä siihen, että tällä kognitiivisen ajattelun mallilla saattaa olla suurikin vaikutus oppilaiden oppimismenestykseen. Kenttäriippumattomat oppilaat ovat aiempien tutkimusten mukaan itsenäisempiä, havaitsevat ja löytävät ratkaisuja ongelmiin joustavasti ja oppivat parhaiten itsenäisesti. Kenttäriippuvaiset oppilaat taas oppivat parhaiten ryhmässä keskustellen muiden kanssa, hyötyvät opettajan ohjauksesta enemmän ja suoriutuvat vaivattomammin loogisesta ja rakenteeltaan selkeästä tehtävänannosta.</p> <p>Tutkimuksessani halusin tutkia miten tämä ilmiö näyttäytyy suomalaisen alakoulun viidennen luokan englannin kielen oppimistuloksissa. Tutkimuksessani tein alustavaa selvitystä siitä korreloiko kognitiivinen ajattelutapa (kenttäriippuvuus, -riippumattomuus) oppilaiden englannin kielen koemenestyksen kanssa ja kuinka koko oppilaspopulaatiota voidaan ohjeistaa, jotta mahdolliset oppimisen esteet poistuisivat ja jotta oppilaat pääsisivät hyödyntämään koko oppimispotentiaaliaan. Toteutin tutkimukseni neliosaisena kyselynä, joka koostui kahdenlaisista hahmottamistehtävistä, joiden avulla kohdensin oppilaat joko kenttäriippumattomiksi tai -riippuvaisiksi, sekä kahdesta kyselyosiesta. Kyselyosioissa pyrin selvittämään ilmeneekö oppilaissa kognitiivisille ajattelutavoille tyypillisiä käyttäytymismalleja.</p> <p>Tutkimustulokset antavat viitteitä siihen, että kenttäriippuvuus korreloi englannin kielen oppimismenestyksen kanssa, mutta oppilaiden vastaukset kysymyksiin koskien kognitiivisille ajattelutavoille tyypillisiä käyttäytymismalleja olivat vahvasti tulkinnanvaraisia. Tulokset antoivat kuitenkin viitteitä siihen, että kenttäriippuvaiset oppilaat implementoivat mieluusti opiskelumetodeja, joissa heillä on mahdollisimman vähän häiriötekijöitä ja riittävästi aikaa oppimiseen, kun taas kenttäriippuvaiset oppijat näyttäytyivät joustavampina oppijoina ympäristönsä suhteen. Tutkimustulokset eivät olleet lopullisia, mutta aiheella on mahdollisesti suuri merkitys opetuskäytänteisiin – oppituntien suunnittelusta koetilanteiden suunnitteluun. Näin ollen on suositeltavaa, että voimakkaammin kontrolloitua ja standardoitua jatkotutkimusta aiheesta tehtäisiin myös tulevaisuudessa.</p>	
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1. INTRODUCTION

During the beginning of my teacher studies I encountered an idea which collided strongly with my personal beliefs about the human mind and its capabilities. Johnson (2008: 142) recounted “the sad story of the Student A” where a foreign language student, who reported high motivation and continuous effort to learn, remained below the average in learning results. Johnson suggested that the Student A’s poor performance was the result of her cognitive style Field Dependence. According to Evans (2013: 210-211, 217) the Field Independence - Dependence is a cognitive style construct which is built around the idea that an individual holds a certain set of patterns to see and approach the world surrounding him or herself: both the abstract and concrete aspects of it. Johnson (2008) argued that since the student was Field Dependent, she was innately unable to produce the good learning results her motivation and hard work should have enabled her.

I found Johnson’s conclusion objectionable: therefore, I decided to study the matter more closely, and see if the student’s Field Independence - Dependence (FI/D) truly defined her ability to learn. If Johnson’s argument was true, the concept would give us further insight on how to alleviate the learning process for the Field Dependent students who were deemed by Johnson as incapable to learn well.

What I encountered during the course of further inquiry into the subject, was a sea of information for and against the concept. The concept was first introduced by the German psychologist Herman Witkin in the 1950’s, and according to Tinajero and Páramo (1998:229), it has raised significant amount of conversation and controversy along its way. Tinajero and Páramo (1998) state that one of the reasons to suspect the reliability of the concept, or the very existence of it, is the fact that Field Independence seems to overlap with other abilities, such as intelligence and memory skills, and therefore should not be taken as an individual concept. However, they also claim that there have been inconsistencies in the variables which measure the relationship of these skills and the Field Independence - Dependence. This controversy was mentioned in Tinajero and Páramo (1998: 229), Hoffman (1997:225) and later by Evans (2013:218): an extensive debate has been going on to this day over whether

FI/D is an ability, such as intelligence, or a skill; whether it is inborn and innate or if it can be changed, learned or altered.

Despite the controversy, the FI/D Concept is valued today as an affective concept within the field of cognitive psychology: Evans and Waring (2015: 67-68, 79) value FI/D as one of the plausible constructs which helps us to further understand learning and how the mind works during the process of learning new or retrieving the old. Even though they do not see FI/D as the final confirmative answer to a student's ability or aptitude to learn, they deem it as worthwhile of our attention since the Field Independence-Dependence is one of the thirteen most dominant and widely used constructions in recent cognitive style research.

In my research I set out to find out if a student's assumed inclinations towards Field Independence or Field Dependence link with the student's success in language learning, and if they do, then how the student population could be catered in a way which benefits all students and removes unnecessary obstacles of learning. To do this I needed to become familiar with the theory and studies related to the FI/D concept. The theory and related studies are discussed shortly in the following chapter.

2. THE CONCEPT OF FIELD INDEPENDENCE - DEPENDENCE

As mentioned previously, the concept of Field Independence - Dependence was first introduced by the German psychologist Herman Witkin inside the field of psychology. Since its birth the concept has been studied extensively inside the area of cognitive psychology, but an another area which has received a great amount of attention is within educational psychology and pedagogical studies (Davis 1991:149). It is no wonder this has happened, since education seems to be one of the fields which could greatly benefit from further understanding and implementing this concept.

The link to education, and the reasons behind the pedagogical interest towards the concept can be understood through the following list of properties associated with the FID learners:

In terms of letter, phoneme, and word skills, field-independent readers are more efficient in letter naming, phonemic awareness, word recognition, word knowledge, decoding, and oral reading...the better comprehension by field-independent readers is related to their more efficient use of comprehension strategies such as organisation of recall, better use of context cues; imagery and active. (Davis 1991: 156).

It seems inevitably clear that anyone concerned with pedagogy should also be familiar with the concept of Field Independence - Dependence, especially in the area of Foreign Language Teaching.

2.1 Defining the Field Independence - Dependence

Evans and Waring (2015: 82) define FI/D as a **perspective approach** to physical or mental puzzles, where the surroundings affect in a varying degree to the analysis and recognition of a part in the whole. One possible example of how to understand this concept from the perspective of language learning, is in the way a student is able to recognise, learn and execute a certain grammar rule. The Field Independent learner being more readily able to recognise a certain grammar rule and the Field Dependent learner more prone to be confused as the context or the surroundings changes.

However, before Evans and her colleagues' definition of FI/D, the construct was first thought up by Witkin and his colleagues (Witkin 1973:2). Witkin et. al. (1977:6-7) described FI/D construct to be a cognitive style. Cognitive style is a broader concept which is defined by Kozhevnikov et. al. (2014: 3) as the consistent ways an individual adapts to the world surrounding themselves. According to them these ways, or patterns of behaviour, emerge from the individuals innate predispositions and interactions, which are likewise shaped by the changing demands in the individuals environment. To go further from the broad concept of cognitive style: Witkin et. al. (1977: 6-7) defined FI/D as the way a person approaches the world surrounding themselves, and as the way an individual processes it. In Witkin's own words: "...the extent to which the person perceives analytically" (Witkin et. al. 1977: 6-7).

According to Tinajero and Páramo (1998:228) Witkin also used the terms "articulate" and "global" to describe the Field Independent and Dependent individuals: the Field Independents being articulate and able to recognise and organise details, and the Field Dependents obtaining a more global perspective to their observations.

2.2 How the Field Independence - Dependence is measured

Before Witkin defined the construct, he studied the matter extensively. Witkin (1973:4) wanted to see if the surroundings have an effect on how an item inside the surroundings is perceived. One of the earliest versions of Witkin's tests was the rod and frame test. Witkin (1973:2) describe the rod and frame test as a test where the subject is placed in a darkened room where a frame and a rod are lit up on the wall. The rod and the frame around the rod are in a tilted position. Both of them are in different angles. The subject is asked whether the illuminated objects are upright. If the subject considers them tilted they are asked to straighten them to the upright position. The Field Dependent individuals are more affected by the tilt of the frame than the Field Independent individuals, and would adjust the rod according to the frame surrounding it. The Field Dependent individuals were affected by the surroundings, in this case by the tilt of the frame surrounding the rod, and responded accordingly. The Field Independent individuals were less affected by the surroundings (the frame) and were more likely to place the rod in the true upright position as was asked.

The second test was the field embedded figures test. Witkin (1973:4) outlined the test as a task which can be done with pen and paper, and easily altered to accommodate group tests. In the test the subject is shown a geometrical figure which is then removed. The subject is then asked to find this figure among other more complex figures inside a three minute timeframe. This procedure is repeated several times. The less time it took, the more accurately the figures were found, and the more figures a person was able to find in overall, the more Field Independent the person was deemed.

2.3 How the concept developed

In its original form, Witkin (1973: 7) saw the FI/D construct as a continuum rather than two opposing characteristics. On one end of the continuum were the Field Independent (FI) individuals who could easily recognise and process both abstract and physical objects without the interference of their surroundings, and on the other end were their Field Dependent (FD) counterparts who were more prone to be affected by their surroundings (Hoffman, 1997: 223-224). Witkin (1973: 8) went on to theorise that since the FD individuals were affected more by their surroundings, they were therefore more likely to be affected by authority and social factors, and so to become more aware and more skillful in activities which needed social skills. Among other authors, Tinajero and Páramo (1998: 233, 235) have criticised this

idea of the FD individuals having superior social skills compared to the FID individuals. Tinajero and Páramo (1998: 237) went as far as stating that the FID individuals perform better than the FD individuals in all of the studies in which the link between overall academic achievement and the student's Field Dependency were observed; in other words: the FID learners performed better than the FD learners even in the social arena where the FD individuals were expected to have superior performance. These observations went against the expectation that the FD learners would perform better in subjects such as languages where social skills are needed, but instead the FID learners outperformed the FD learners in all areas, including in the social ones.

Nevertheless, there was a reason why Witkin conducted that the FD held superior social skills. According to Witkin himself (1973: 16) studies show that the FD individuals are more abundant in social fields than in technology and natural sciences. Witkin also emphasised that the Field Independents were not superior in any way to the Field Dependents. Even though Tinajero and Páramo (1998: 237) said that the FIDs outperformed the FDs in all educational fields, they also remarked that the FIDs performed better only in the beginning of the learning process on skills that could be automatised, and that the difference in success faded while the educational level increased (Tinajero and Páramo 1998: 230-231). They suggested that this was due to automatisation, which happens while learning a mechanical skill such as reading: the influence of the Field Independence on the reading ability decreased as the skill became more automated. Besides Tinajero and Páramo (1998), Davis (1991:167) also states that after automatisation the FD learners catch up with the FID learners: what they need is more time.

Kozhevnikov et. al. (2014: 6) support the idea of the Field Dependents outperforming the FID's in social skills. They state that the FD learners are more attentive to social cues than the FID learners, who tend to have a more individual outset. According to Kozhevnikov et al. (2014: 6), this individual outset can be seen in the FID learners' behaviour in a group: they distance themselves psychologically and physically from the rest of a particular crowd or culture. If we are to believe Tinajero and Páramo (1998), and state that the FID individuals outperform their FD counterparts in all of the fields of leaning, it can be assumed that perhaps the abundance of FD individuals in social fields is due to their **interest** in their social surroundings rather than their actual superior social skills. It can be that FD learners feel more "at home" in social fields where support and guidance from the outside are more readily

available than, for example, in the field of natural sciences where more individual study and work habits are required.

2.4 Learner characteristics of Field Independent - Dependent individuals

There are several other characteristics besides social preferences connected with the FID and FD individuals. According to Evans et. al. (2013: 214-218) the FD students notice social cues more attentively, but they find transitions demanding and benefit from explicit feedback and structured presentation of information. She goes on to state that detailed feedback is not helpful for the FID learners, and they can easily locate the needed information from its context.

Evans et. al. (2013) mention that the FD students are more easily distracted, and minimising distractions will benefit their learning. Evans describes the FID learners to handle change more easily, and according to her, novel tasks do not stress them. Evans also mentions that the complexity of media is not a hindrance for the FID learners, which might be due to their better working-memory performance.

2.5 Variation and fluidity between Field Independent - Dependent individuals

The interest in social surroundings by the FD individuals might be explained by socialisation. In his presentation, Witkin (1973:10-12) came to the conclusion that an individual's degree of Field Independency - Dependency is determined by socialisation rather than by genetic factors. Witkin (1973) came to this conclusion in part by the observation that children who grow up with stricter control, and who are not encouraged to take independent actions, but to follow their parents orders to the letter, tended to be more Field Dependent. This idea is still today supported by two other voices. The first one is Kozhevnikov et al. (2014:4), who define cognitive style as the ways of information processing which evolves in an individual as a result of environmental and socio-cultural factors. The second one is Evans et. al. (2013: 216), who states that there is reason to believe that a person's position on the FI/D continuum can be altered with the change of environmental and instructional factors: in other words, changing the way a person focuses their attention changes their FI/D. This is called **fluidity** between different styles. Dörnyei (2003: 597) pointed out that noticing is an important part of language learning, and the FI/D construct is one of the ways to define how individuals observe. This raises the question whether the FID individuals perform better simply because

they observe differently than their FD counterparts, and if we could change the focus of that attention to help the FD learners more towards Field Independency.

2.6 Further support for fluidity

Based on the literature reviewed, we can say with confidence that the FI/D construct has changed from the idea of an individual being placed on a certain position on the FI/D continuum to the idea that the individual can alter his or her position fluidly, if practice, support and skills for this behaviour are available. The idea of fluidity or alteration is further supported by Evans and Waring (2015:87), with the statement that neuropsychology plays its part in language aptitude - the ability to learn languages - and its' development. They state that even though every student is equipped with a certain set of cognitive tools - like the FID construct - it does not mean these styles could not be changed or altered. They go on to describe the way neural pathways are formed and strengthened during one's lifetime and hence how they can be altered. This results in a myriad of cognitive styles, and instead of just one definitive approach, such as the FI/D, Evans and Waring (2015) advocated the Cognitive Style Profile where individuals take command of a variety of cognitive styles and perform with the one that suits their current situation the best. They also point out that every individual's ability to use the most suitable style in the most suitable situation varies, and therefore the need of instruction varies: some individuals are already able to fluidly change between styles, but others need more guidance to the right direction. This is supported by Hoffman (1997: 228) who presented the findings of a study where the FD individuals' performance in language comprehension improved when the learners were given structure and guidance to their learning and task execution.

The literature on the subject is varied, and statements both for and against the FI/D construct are made, but according to Dörnyei and Skehan (2003: 622) it is certain that "...foreign language aptitude [the ability to learn well] and cognitive style have some degree of relationship."

Field Independency - Dependency is a complex and fluid matter, but on the perspective of language learning it is crucial for a language teacher to be aware of the implications cognitive style theory gives us on the Field Independency - Dependency . To summarise the link between the FI/D theory reviewed and language learning: cognitive style affects how the

student observes, notices, processes and executes information. It affects the efficiency and speed of learning, and gives us guidance on how the students approach novel information. Most of all, it gives us a new perspective: we teachers have a certain set of cognitive tools ourselves, and the students have their own. What might seem simple and obvious to us, might seem mixed and puzzling to the students. We must be aware that the student population have varied ways of perceiving the world and therefore the processes executed during class should also be varied. The students are likely to have a whole another perspective to the matter than we do.

3. THE RESEARCH PROBLEM AND QUESTIONS

Johnson (2008:142) made a bold argument: an individual's capabilities to succeed in language learning are determined by their innate natural characteristics (the FI/D), and this might be the reason why the student fails to succeed in language learning, despite her great effort and motivation. My aim in this study was to produce a preliminary inquiry whether Johnson's argument had solid academic footing or not, and what we could do to alleviate the situation if he was correct.

I intend to provide an answer to the following questions:

- 1) Does a student's assumed inclinations towards the Field Independency or Field Dependency link with the student's success in language learning?
- 2) Could the student population be catered in a way which benefits all, and removes the possible obstacles of learning?

4. DATA AND METHODS

4.1 Method of data collection

For my data collection, I used three different tools to evaluate whether a person was more inclined towards the FID or FD end of the cognitive style construct. My first tool emulated Witkin's field embedded test (Witkin 1973: 4). From the following resources I modified and produced two embedded figures tasks for the test. The first Figure (Appendix A: 28) I used was reproduced from Prinz (2011), and the second Figure (Appendix A: 28) was my own adaptation from Allen (2009). Since I was unable to produce a full and complex embedded figures test, I designed questions to find out whether the students would report qualities which would link with the qualities present in the background literature. Along with these two measurement batteries I introduced the students with three crowd pictures from *Where is Wally? A fantastic journey* by Martin Handford (1989) to see if the students would be able to find a certain character from the pictures (two examples in Appendix B: 31). I chose the identification of a figure as my method since this paralleled with Witkin's embedded figures test, where the test subjects are asked to find abstract geometrical figures inside more complex ones, and a simple character inside a crowd mimics this - with an appeal to children.

4.2 The test group

My test group was a group of 15 fifth graders from a Finnish primary school, four girls and eleven boys. The test was conducted in a regular primary school classroom during a 40 minute timeframe in September 2015. I presented the whole group with the questionnaire papers I had created for the test, and asked them to answer them individually. The questionnaire had five parts, and the group shifted from one part to the other together with my instruction. Unfortunately I did not time the shifts between different parts, but I made sure all of the students had enough time to answer all of the questions.

4.3 The Test

The background variables presented in the first part of the questionnaire were age, the time of starting their English studies, and the subjects' hobbies. This section was followed by the two embedded figure tasks on the same answer sheet. Here the pupils were asked to locate the figure shown on the left from the figure shown on the right (Appendix A: 28). After the first two sections were completed I allowed the students to continue to the third section.

In the third section I presented ten Likert-scale questions with sliding-bars to allow visual representation of the answer (Appendix A: 29). The questions were phrased as statements, and the students were asked to colour the sliding bar as much as they agreed with the statement. The questions were designed to reveal if the students had characteristics associated with either FID or FD characteristics. I chose the sliding-bars since my sample consisted of 10 and 11-year-old students and I expected the visual measure to be more appealing to them.

After the completion of the third part I showed the students three pictures from a children's book *Where's Wally? The Fantastic Journey* by Martin Handford (1989). The pictures were colourful crowd-myrriads, where characters had been hidden or disguised. I asked the students to raise their hands after they found the main character "Wally" and I assigned them with a number according to how fast they found the character. The students then recorded the number on their questionnaire. Each picture was visible for 3-5minutes.

A final set of 12 Likert-scale questions followed after the pictures (Appendix A: 30). These questions were designed in the same fashion as the previous ones. I included several questions with different wordings to detect the characteristics associated with the FI/D styles. The whole study, including the questionnaire, was conducted in Finnish: the students' native language. For this paper I have included an English version of the questionnaire (Appendix C: 32). I compared the test results with the students' success in an English exam they had in November 2015.

5. RESULTS AND ANALYSIS

Since the number of participants in the test group was very small, no statistical conclusions could be drawn, and the quantitative analysis methods had to be left out. To analyse the results, I developed a chart to broadly evaluate the students' answers to the questionnaire.

The test questionnaire had three different ways to evaluate whether the students linked with the Field Independence or Dependence side of the concept's spectrum: the field embedded figures task, the questions linked to certain characteristics, and finding the Wally-character from the crowd pictures.

The students' answers to the character questions, which were designed to reveal whether the students possessed characteristics typical to the FI/D individuals, varied through the whole concept's spectrum; in most of the character questions the students I linked with Field Dependency through their performance in the visual tasks did not give distinctly different answers compared to the students I linked with the Field Independent end of the spectrum. However, there was a visible difference in the combined performance in the embedded figure tasks, finding the Wally-character and the grades the students received from their latest English Exam: the pupils performing better in the two visual tasks, embedded figures test and finding Wally, had higher grades from their latest exam. In other words: the better the pupils performed in the visual tasks, the more strongly I linked them with the FID side of the spectrum. I have included in the following chapters the result charts which I found relevant to the study, along with evaluation of their importance concerning the research questions.

5.1 The embedded figure tasks and finding the Wally-characters

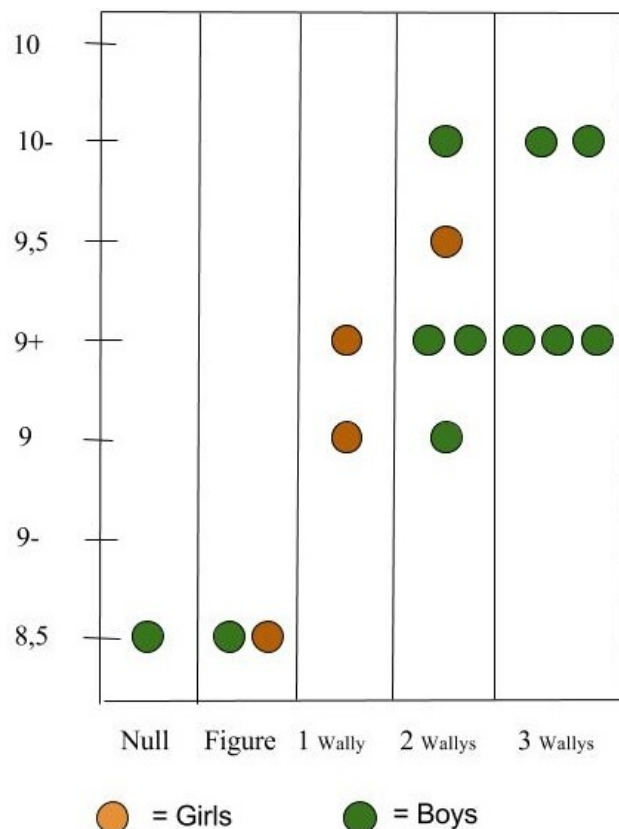


Figure 1. Results by gender

In Figure 1, the upright axis represents the grades the pupils received in their English exam in November 2015. The overall scale of grades used in the Finnish primary schools is from four to ten, ten being the best possible grade.

The horizontal axis represents the pupil's **combined performance** in the embedded figures tasks and finding the Wally-characters.

On the horizontal axis "Null" means the student was unable to find neither the embedded figures nor any of the Wally-characters, "Figure" means the student

was able to find one or both of the embedded figures, "1 Wally" means the student was able to

find one Wally and one or both of the embedded figures, “2 Wallys” with two Wallys, and “3 Wallys” with three Wallys.

As both the embedded figures tasks and finding the Wally-characters were designed to evaluate whether a pupil was more inclined to the FID or FD style, it can be speculated from Figure 1 that the better a student’s combined performance in these tasks was, the more Field Independent the student is likely to be. Considering the first research question, if a student’s assumed inclinations towards the Field Independence or Field Dependence link with the pupil’s success in language learning, then the distribution of grades points to the direction of a very plausible link between the student’s cognitive style and his or her performance in language studies.

This speculation is derived from the evidence that the three students who received the lowest grades were all unable to find any of the Wally-characters or neither of the embedded figures, whereas the top four performers in the English exam were able to succeed in both the embedded figures tasks and finding the characters in the pictures. What is not presented in Figure 1 is the speed with which the students found the Wally-characters: the top students were among the first students to spot the characters. This parallels with Witkin’s (1973:4) tools for evaluating how FID or FD a person is: the FID person is able to find the figures among the mixed images, and they are able to do so quickly.

What also parallels with earlier results (Witkin 1973: 5-6) is the gender distribution. Previous studies point to the same direction which can be seen from Figure 1: females seem to be more Field Dependent than males, since in all of the grade-groups the girls found fewer characters than the boys. However, according to some critics, such as Evans et. al. (2013:214), the gap between the genders’ performance was largely counted as the result of a fault in the Witkin’s original examination settings: the rod and frame test was conducted in a darkened room and cases of harassment were rumoured. This was likely to affect the test results to widen the gap between the genders. Nevertheless, we should keep in mind that the number of girls (four) in the present study is remarkably small and that these four individuals can not represent their whole gender population. We can only remark that there seems to be a trend in the results: boys populate the FID side of the spectrum more prevalently.

5.2 The character questions compared to the result distribution

In Figure 1, the “middle section”, students with the grade 9+ in English, do not stand out remarkably, but the figures in the following chapters present results which are very interesting: the more Wally-characters the student found, the more Field Independent his or her answers to my character questions seemed.

In the questionnaire all of the questions were formed as statements, and the students were asked to answer how much they agreed with the statements in a scale of one to seven: the greater their agreement, the greater the number. In all of the following figures, the colours of the results represent a FID (red), a FD (orange), or an in-between (green) answer.

Unfortunately I did not give the students the possibility to answer neutrally if they had no opinion, or if they simply did not care about the issue. There was one student, a FID boy (see Figure 8: 20), who expressed his desire to answer neutrally: he asked me *What if I don't care?* and wrote *I don't know* besides his answer. This error in questionnaire design influences the evaluation of the results: it reminds us that great caution should be taken when considering the implications of the students' answers.

However, even though it is not possible to derive definite answers from these results, we can look at the answers and speculate on their implications concerning our research questions. This is done in the following chapters.

5.2.1 Noise and disturbance in the classroom

In Figures 2 and 3 the statements were based on the assumption that a Field Independent individual is disturbed less by outer disturbances than a Field Dependent individual (Evans et al. 2013:219). I approached the issue from two different angles to see if the students' answers would express the same opinion. In Figures 2 and 3 the top three performers paralleled with the expectation that a FID individual is less disturbed by outer nuisances, but for some reason the answers in the grade group 9+ did not match in the figures.

There is no straightforward explanation for the students' answers: perhaps the students understood the questions in a different way than I expected, or perhaps in Figure 2 the grade group 9+ students meant that they do not like disturbances, but in Figure 3 the pupils reported that despite disturbances they were able to concentrate. This evaluation parallels with the original assumption that the Field Independent individuals are less disturbed by outer aggravations and are able to concentrate on their studies despite of them. Considering this, and the results shown in Figure 2, we could take this assumption into such length that most FID students (the top three performers) are not affected by outer disturbances at all, and therefore the disturbances do not raise any kind of negative feelings in them.

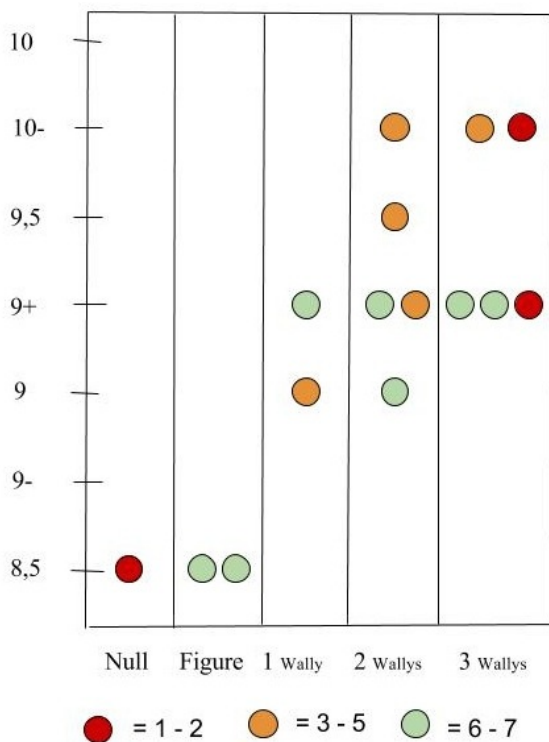


Figure 2. "Disturbances bother me."

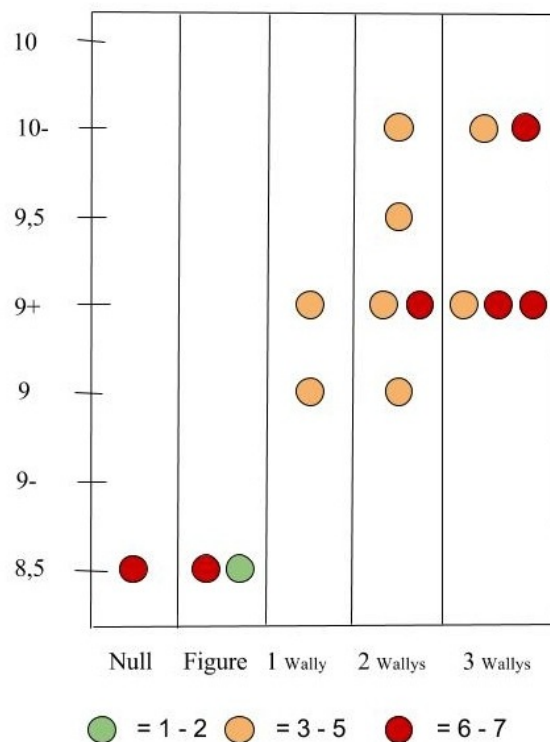


Figure 3. "I can concentrate despite disturbances."

5.2.2 Deducing, understanding, analysing

According to Evans et. al. (2013:215) the Field Independent individuals find it easier to identify the most essential information from its context and implement this information effectively to the practice. I tried to envision the ways these characteristics might manifest in the school environment, and in the normal everyday life of a 10-year-old.

Besides superior recognition abilities, Evans et. al. (2013:214) mention that the FID individuals find transitions and novelties easier than the FD learners. I concluded from this that the FD learner might feel more anxious when confronted with new situations, exercises, or games; therefore, in the statements, I combined novelties and the need to analyse and to understand new logical information: such as how a game or exercise works, and how to succeed in them with the best possible outcome. These assumptions were implemented in the statements in Figures 4, 5, 6 and 7.

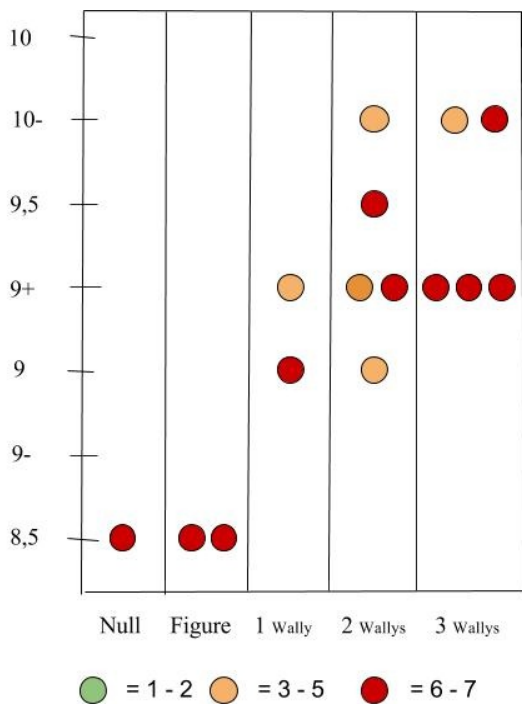


Figure 4. "I enjoy to figure out by myself how things work"

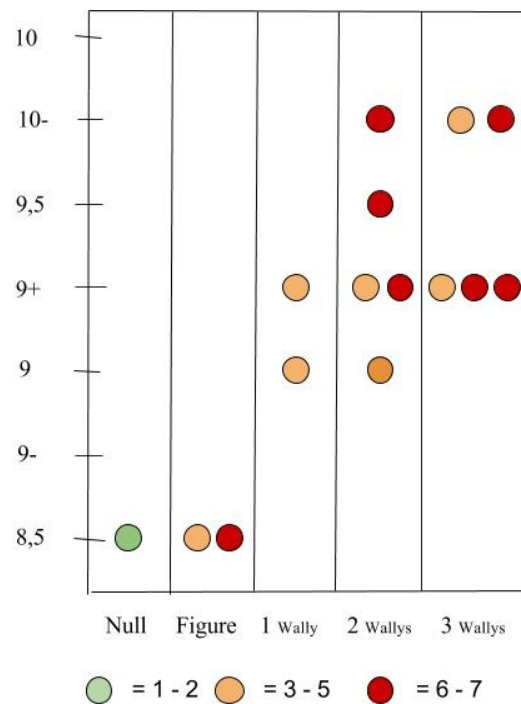


Figure 5. "I can easily figure out how an exercise works"

Figure 4 shows that almost everyone responded with the red FID answer, but in Figure 5 the FID answers seemed to fall more to the students who had succeeded better in the exercises that evaluated their FID skills. One could speculate that in Figure 4 the reason why the three lowest performers answered that they enjoy to figure things out by themselves, is owing to the fact that perhaps by "figuring out by oneself" they can decide their own pace and they can

take their time in the task at hand. This speculation agrees with the earlier notion by Davis (1991:153) that the FD individuals are indeed as capable to learn as the FID learners, but for them it takes more time, and they are not as efficient as their FID counterparts.

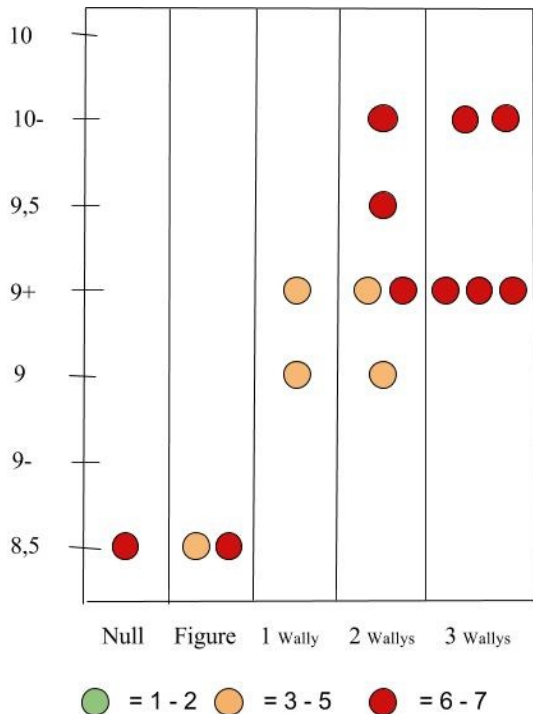


Figure 6. "It is easy to learn the rules for a new game"

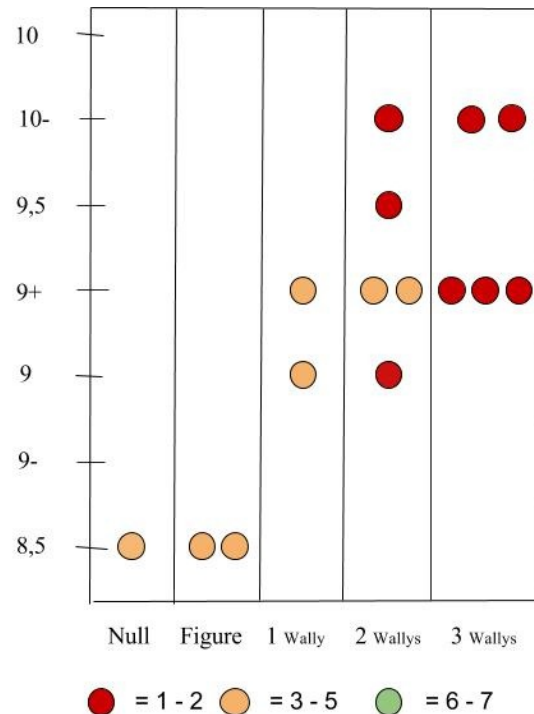


Figure 7. "It is unpleasant to learn the rules for a new game"

In the Figure 6 and 7 the answers resemble the ones found in Figures 4 and 5. No one gave distinctly FD answers, but in Figure 7 the more FID answers seem to fall again towards the more FID individuals. Based on these four figures (4-7) it seems that when students are asked about their abilities, they evaluate their skills higher, but when they are asked whether they enjoy or like something, then their answers better portray what is true also in the reality.

5.2.3 The students' own space and pace

As it was mentioned earlier, the Field Dependent learners are believed to benefit when information is presented in a structured way (Evans et. al. 2013:215). When this is turned to the other way round we come to the conclusion that the Field Independent learners do not need to be presented with a structure to find the needed information. On top of this, Evans et. al. (2013:215) state that the FID learners are able to handle well media complexity, and that they benefit the most from visual information. They do not need explicit instruction, and according to Evans et. al. (2013: 216) they feel frustrated if they are not allowed to work

independently. According to Kozhevnikov et. al. (2014:6) this “individuality” reveals itself in the social proximity which the Field Independent individuals display. According to them the FID individuals tend to prefer solitude, both mental and physical. The pupils answered as assumed in Figure 8, where the green FD answers were given by the FD learners; however, in Figure 9 the whole scene seems to be turned upside down.

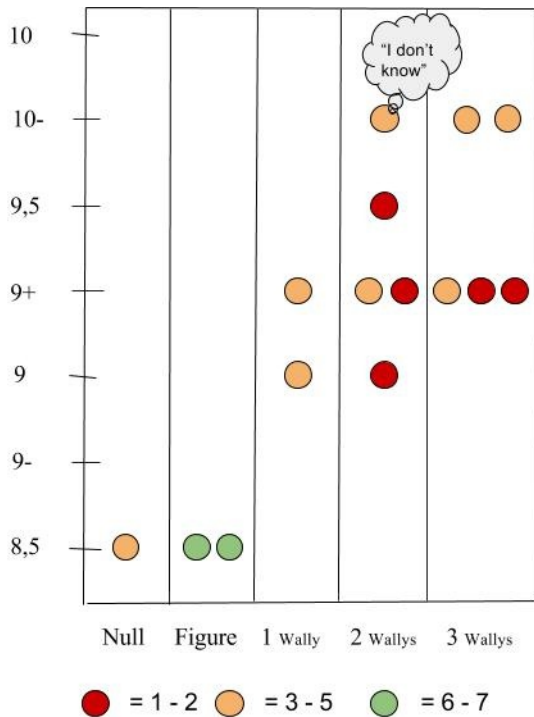


Figure 8. “I like when things are taught in an organized manner.”

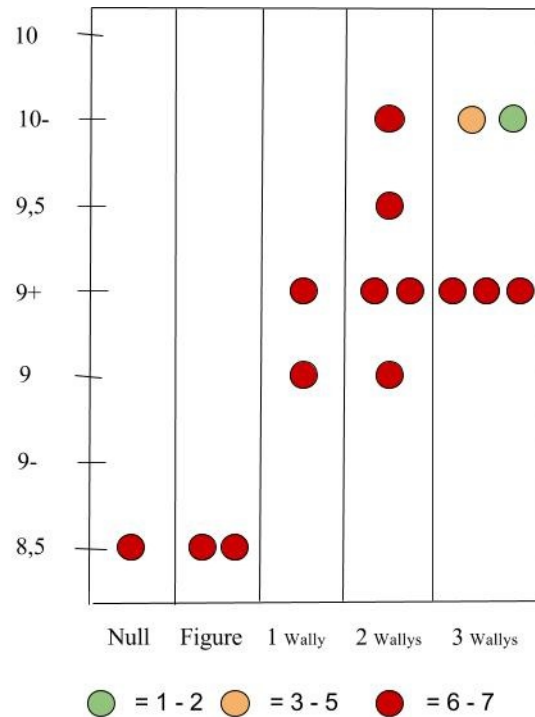


Figure 9. “I like to choose the order in which I will learn new things.”

In Figure 9, the learners with the most FID inclination are the only ones who give the FD answers. Perhaps here the same phenomena is at work as in Figure 4: when one can choose the order, one is also free to choose the pace; therefore, it might make the learning process feel more comfortable for the FD learner if they controlled their own learning pace. It might be speculated that the FID learners in Figure 9 simply did not care whether they could choose the order or not, or whether they had order at all. This is supported by the fact that one of the FID learners (shown in Figure 8 as a thought bubble) asked me *what if I don't care?* and wrote *I don't know* beside his answer.

What truly surprised me were the pupils' answers to the statements concerning physical and emotional proximity in Figures 10 and 11. Again the answers did not come as expected. I predicted that the Field Independent learners' social separation could be observed from their

preference to work alone, and especially their preference to sit away from others. Obviously I was mistaken.

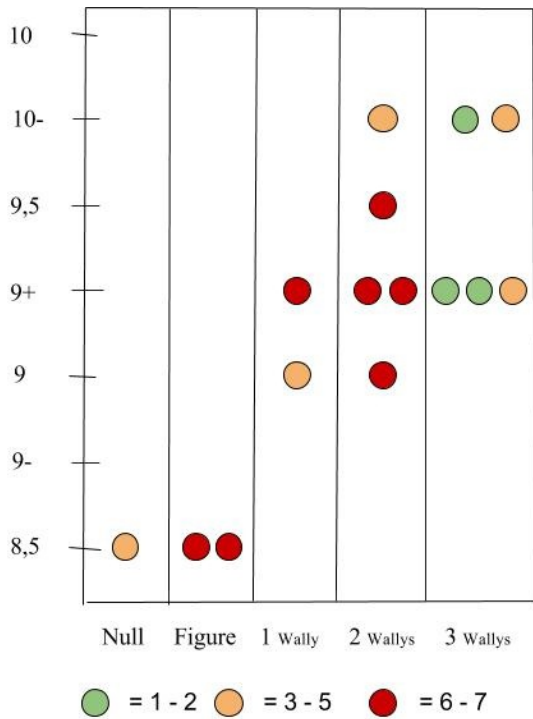


Figure 10. "I sit gladly in my own peace and quiet."

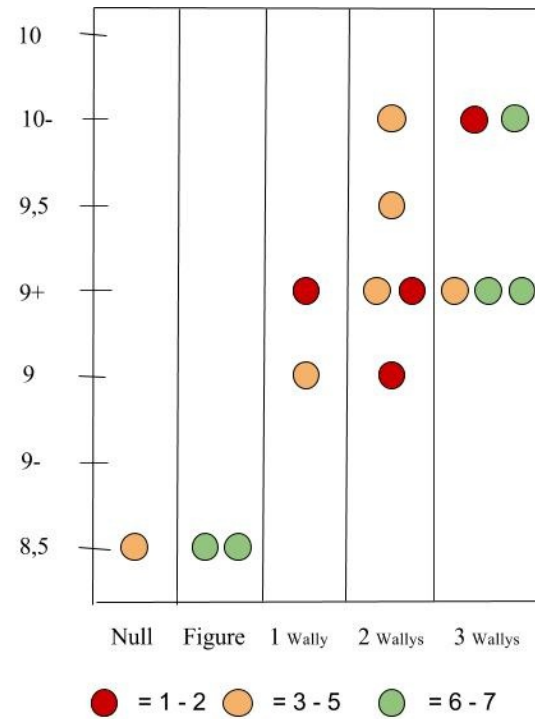


Figure 11. "I sit gladly close to others."

10-year-olds seem to enjoy their friends company during all times, but when it was a question of "peace and quiet", the FD students seemed to crave for it. Perhaps they reported that they sit gladly in their own "peace and quiet" since they are more easily disturbed by outer commotion, and sitting farther away from the rest provides less disturbances.

5.2.4 Self-evaluation

What we observed earlier in Figures 4-7, seems to be repeated in Figures 12-14, possibly 15. It seems that when students are asked about their abilities, they evaluate their skills higher, and study subjects easier than what they actually are. In Figures 12 and 13 where the students were asked how hard or easy the tasks felt like, the opinion correlated with their performance. However, in Figure 14 the FD students' performance in the English exam and how easy they found language learning did not match.

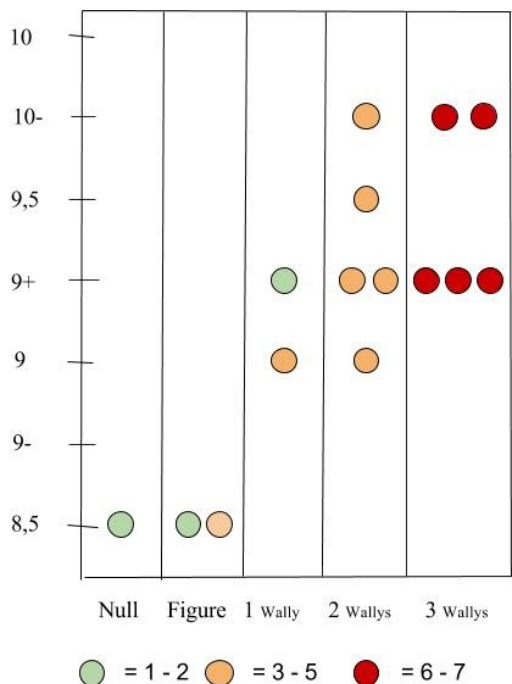


Figure 12. "It was easy to find the characters"

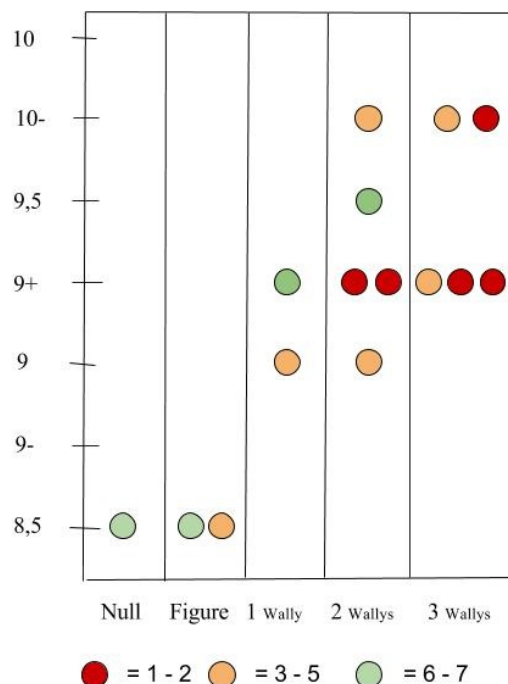


Figure 13. "It was difficult to find the characters."

Majority of students found language learning and remembering things easy for them, no matter what their actual success was, as can be seen in Figures 14 and 15. It could be speculated that perhaps the FID learners are more adept to evaluate their actual performance, or that the majority of students simply had a strong positive image of themselves and their language learning skills.

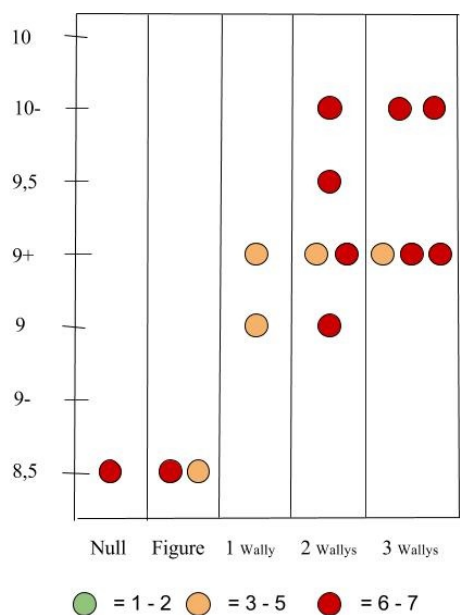


Figure 14. "Languages are easy."

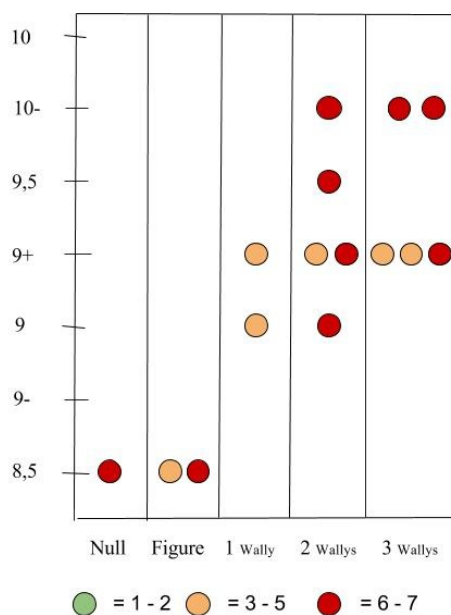


Figure 15. "I remember things easily."

5.3 Discussion

Considering the results we have here, it can be said that the students' inclination towards the FI/D does seem to link with their success in language learning. If we continue to hypothesise that the FI/D plays a role in language learning we need to consider the second research question: could the student population be catered in a way which benefits all and removes the possible obstacles of learning? Evans et. al. (2013:218-219) lists studies by Stamovlasis and Tsaparlis (2005), Overton and Potter (2011), Minear and Shah (2006) and Commander and Valeri-Gold (2001), which suggest the following actions might help the students to perform better:

...reducing the complexity of learning environments and the cognitive load , as well as increasing the efficiency of working memory...minimizing the 'noise' (distractions) in the system.
(Evans et. al. 2013:218-219)

These propositions made by Evans et. al. (2013) seem logical and simple to implement even if we are not yet completely convinced of the actual prevalence of the FI/D construct. In the light of the current results it seems that the suggestions they mention for alleviation are the tools the FD learners seek naturally in their preferred ways to study. The FD learners seek to avoid disturbances and seem to avoid hurry, but prefer to take their time in learning.

However, simply removing the obstacles is not enough. We should work in a way which enables the FD learners to shift more towards the FID side of the spectrum. In the literature Kozhevnikov et. al. (2014 :19) conclude that Field Independence seems to be fostered by increased amount of art education. This links to Evans and Waring (2015: 82) who defined FI/D as a perspective approach: FI/D is a way to define how an individual observes and concentrates their attention. Dörnyei and Skehan (2003:597) mention that noticing is an important aspect of learning, and to be able to notice one has to be able to concentrate. In arts one has to develop a very intensive way of concentration to be able to create or perform a piece of art. These mental exercises may train the brain and hence more neural pathways are formed: this leads to a gradual transfer towards the FID style. Evans and Waring (2015: 83) call this phenomena **brain plasticity**. According to them experiences change the synaptic connections in the brain, and these changes determine individual performance.

When all this is taken into consideration with language learning, perhaps we could alter an individual's point of concentration, or his or her ability to shift their concentration to alter their place on the FI/D spectrum to enhance their language learning possibilities. This is a slow and delicate process, but still goes to show the potential value of arts and music, as they might help individuals to gain higher potential in their learning.

6. CONCLUSION

The aim of this study was to consider if a student's assumed inclinations towards Field Independence or Field Dependence link with the student's success in language learning, and if the student population could be catered in a way which benefited all by removing the possible obstacles of learning. With the resources at hand I was able to conduct a preliminary study to evaluate a group of 15 students and their inclinations inside the Field Independent - Dependent spectrum. The students' inclination towards either side of the FI/D spectrum was analysed using three different tools: a small field embedded figures task, a task to find the cartoon character "Wally" among a big, myriad crowd, and two sets of questions to determine if the individual possesses characteristics typically found in the FI/D learners.

Some of the results were in line with earlier research: the students with better success in languages had better success in the embedded figures and Wally-tasks, and therefore were considered to be inclined towards the FID side. The results also pointed to the direction that girls tended to incline more towards the FD side than the boys. However, this conclusion is highly debatable since there were only four girls taking part in the present study.

What was not completely clear cut, but under speculation, were the rest of the results considering the students' answers to the characteristic questions. The students were asked to respond to two sets of questions which were based on assumptions on typical characteristics found in the FID and FD learners. These results suggest that outer disturbances bother students to a varying degree depending on their assumed cognitive style: most of the FID students were not bothered by the disturbances at all, while the majority of the FD students reported to be slightly bothered by them, and the pupils falling in between reported that they did not like disturbances, but were able to concentrate despite them. Furthermore, what

seemed to come visible was the students', especially the FD students', desire to control the pace with which they studied. Due to the hectic nature of a typical classroom, the FD students reported they enjoyed solemn peace and quiet, against the original assumption that the FI/D students would be the ones enjoying solitude. These results go to show that only further open-ended questions in a wider individual interview, and observations of actual classroom activities, could provide us with solid proof for any statement considering the typical characteristics of the FI/D learners.

If we speculate on the implications of art studies on FI/D, we could argue that it is the combined curriculum which enhances learning, and the effect of separate subject studies is entwined. These findings suggest that time, a place of concentration, and student autonomy are important assets in language learning, and language educators should consider implementing tasks which strengthen these aspects into their current curriculum. A place of concentration differs from student to student, but chiefly would comprise of a space where there are resources available for learning (for example books, pictures, pens, papers and so forth) and no major disturbances for concentration. For language learning, it seems beneficial to integrate more autonomy and arts to the classroom; from these two especially arts during the lower grades, since this is likely to be an activity in which children would love to participate. However, this said, I have no doubt drawing one's own vocabulary, or playing word guessing games on the whiteboard, would do any harm on higher levels or in adult education. Drawing out words could be a relaxing homework specifically in the start of the learning process.

In closing, even though the results of this study are solely preliminary, and further studies are needed to determine whether the suggestions made in this paper truly keep their promise or not, we can still argue that language teachers should actively encourage their students to take part in art classes and activities which enhance the capacity of their students' working memory. In addition, reducing the complexity of learning environments and the amount of cognitive load could alleviate the FD learners' obstacles in their learning experiences.

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APPENDIX A

Kyselytutkimus Normaalikoululla syyskuussa 2015
Tutkimuksen suorittaja Veera Laine, Jyväskylän Yliopisto

1. Missä kuussa on syntymäpäiväsi? _____

2. Kuka on englannin opettajasi? _____

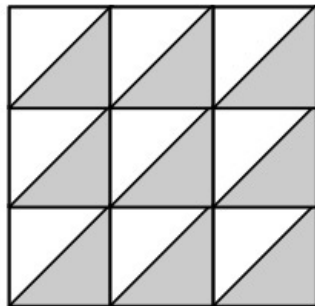
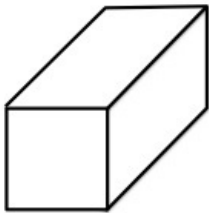
3. Millä luokalla aloitit englannin opiskelun? _____

4. Harrastatko musiikkia tai kuvaamataitoa koulun tuntien lisäksi? _____

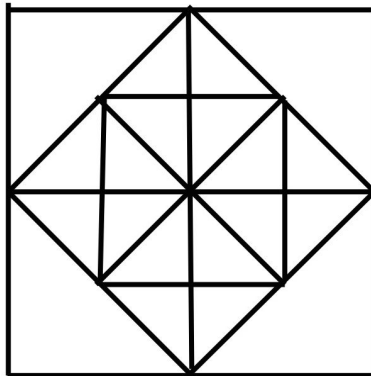
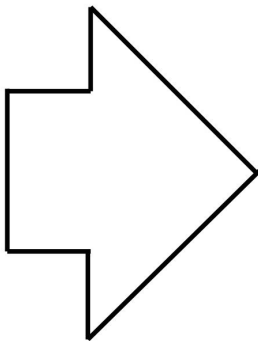
- Mitä harrastat?

- Kuinka usein viikossa?

5. Etsi vasen kuvio oikean kuvion seasta. Väritä tai tummenna ääriviivat.

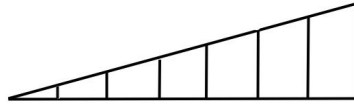


(Copyright Prinz, J.)

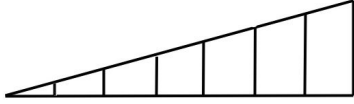


6. Väritä laatikoista alue joka kuvastaa kuinka paljon olet väittämän kanssa samaa mieltä.

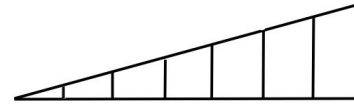
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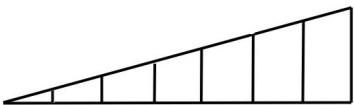
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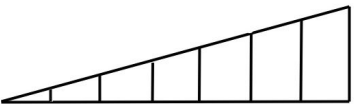
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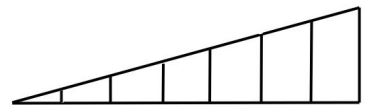
Kielten oppiminen on helppoa.



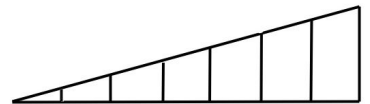
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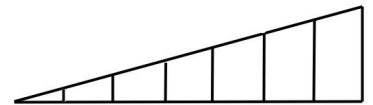
Minusta on hauskaa tehdä uudenlaisia tehtäviä.



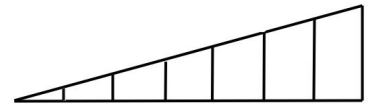
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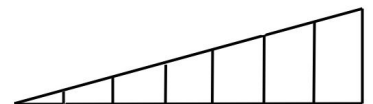
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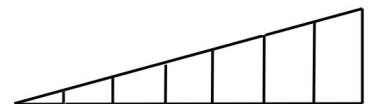
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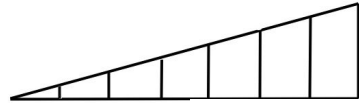
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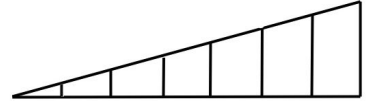
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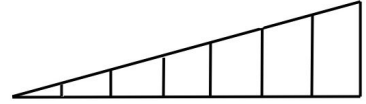
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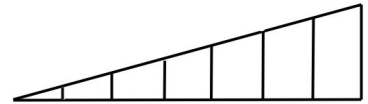
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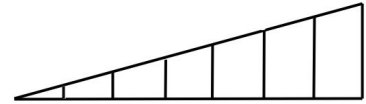
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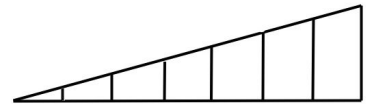
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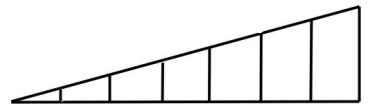
Istun mielelläni lähellä muita.



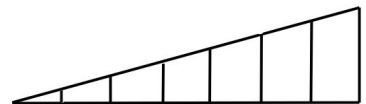
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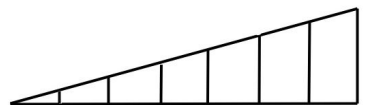
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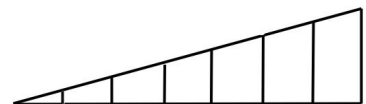
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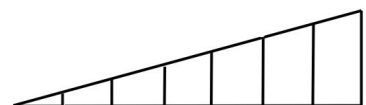
Minusta lautapelit ovat monimutkaisia.



Minusta lautapelit ovat mielenkiintoisia.



Tähän kyselyyn vastaaminen oli helppoa



7. Oletko aiemmin nähnyt näyttämiäni kuvia? _____

8. Kirjaa tähän ylös saamasi numero tai X jos et saanut numeroa

1. kuva _____

2. kuva _____

3. kuva _____

APPENDIX B



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APPENDIX C

Questionnaire research at Normaalikoulu, autumn 2015
 Researcher Veera Laine, University of Jyväskylä

1. In which month is your birthday? _____

2. Who is your English teacher? _____

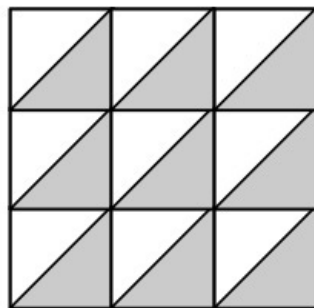
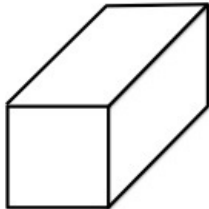
3. On which grade did you start your English studies? _____

4. Besides school, do you practice arts or music? _____

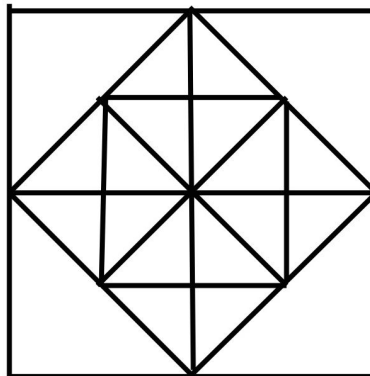
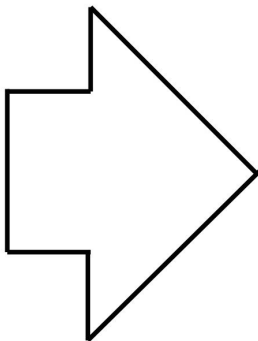
- What are your hobbies?

- How often do you practice your hobbies?

5. Find the figure on the left from the figure on the right. Strengthen the lines or colour in.

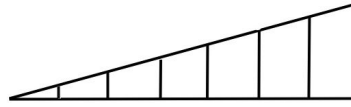


(Copyright Prinz, J.)

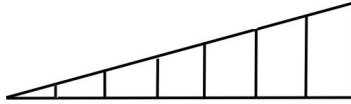


6. Colour in the area inside the slides which correlates with how much you agree with the statement.

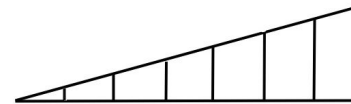
For example:
I enjoy swimming.



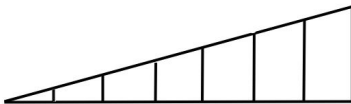
Looking for the figures was fun.



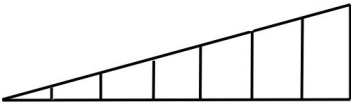
I enjoy learning languages.



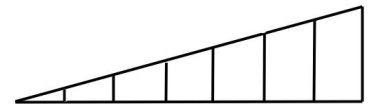
Learning languages is easy.



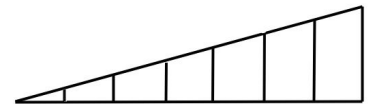
I easily remember new things.



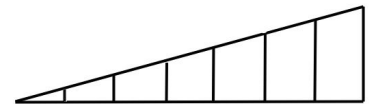
I enjoy doing new tasks.



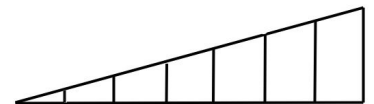
I can easily figure out how to get the best points from a new task.



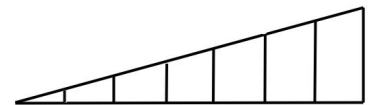
I enjoy when things are presented in order.



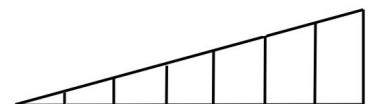
I like to choose the order in which I learn new things.



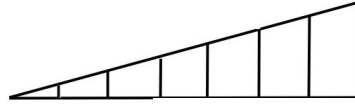
Disturbances in the classroom disturb me.



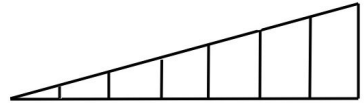
I enjoy it when I am allowed to figure out by myself how things work.



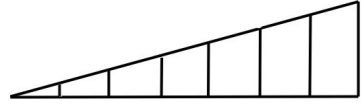
It was easy to find the figures from the pictures.



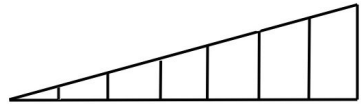
It was difficult to find the figures from the pictures.



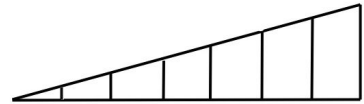
I can easily concentrate even if there are disturbances.



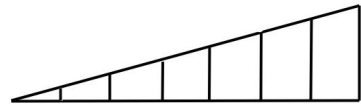
I prefer to sit in my own peace and quiet.



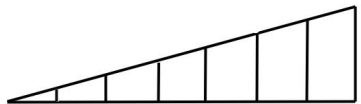
I prefer to sit close to others.



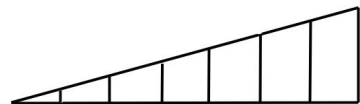
I like to play boardgames.



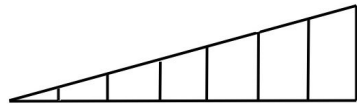
It is easy to learn the rules for a new boardgame.



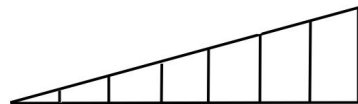
It is unpleasant to learn the rules for a new boardgame.



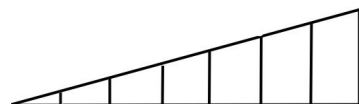
I think boardgames are complicated.



I think boardgames are interesting.



It was easy to answer this questionnaire.



7. Have you previously seen the pictures which were shown to you?

8. Write down the number you were given, or **X** if you weren't given a number.

1st picture _____

2nd picture _____

3rd picture _____