# Predict Student Dropout Risk by SMA and Behaviour Change Cycle

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# Dropout: Definition and Statistics

Number or ratio of students who leave higher education without a qualification. (Fenyves, et. al., 2017)
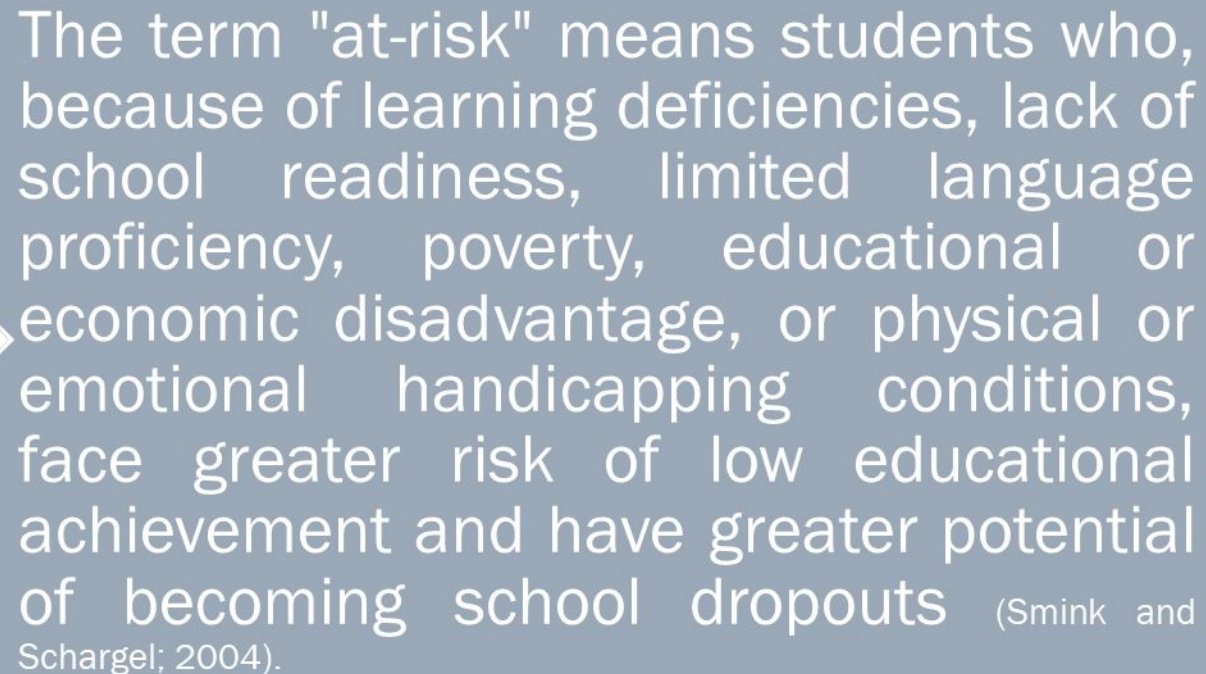1. Leave institute
2. Leave system

**Dropout rates**
**USA:** 40% - 30% (Freshmen)
**OECD:** about 30%
**Israel:** about 40% in some Universities
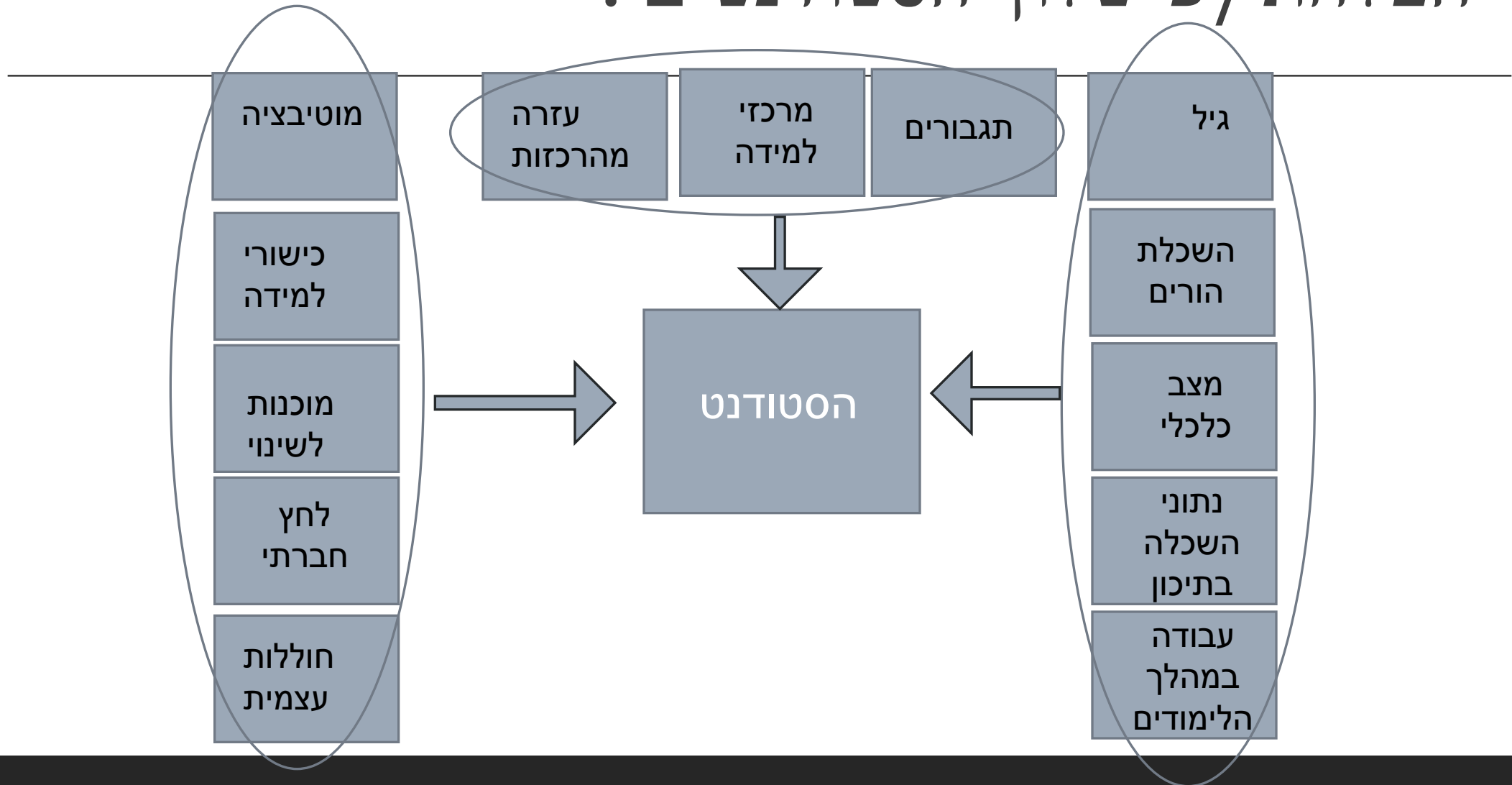
# Risk Factors: The Research Base

The term "at-risk" means students who, because of learning deficiencies, lack of school readiness, limited language proficiency, poverty, educational or economic disadvantage, or physical or emotional handicapping conditions, face greater risk of low educational achievement and have greater potential of becoming school dropouts (Smink and Schargel; 2004).

# Risk Factors: The Research Base

1.  Previous research show that the *first academic year* is critic for students' success

2.  The riskiest study programs are *technical, IT, and natural sciences*.

3.  *Male students* are more endangered to dropout.

4.  Students from *minorities or peripheral areas* recieve less qualitive education and tend to be more involved in dropout.

5.  Civic engagement and good A-level exam results decrease the chance (Pusztai, et.al, 2019; Arulampalam, et.al., 2001).

# המודל התיאורטי- מה משפיע על הצלחת/כישלון הסטודנטים?

| מוטיבציה |
| --- |
| כישורי למידה |
| מוכנות לשינוי |
| לחץ חברתי |
| חוללות עצמית |

| עזרה מהרכזות | מרכזי למידה | תגבורים |
| --- | --- | --- |

**הסטודנט**

| גיל |
| --- |
| השכלת הורים |
| מצב כלכלי |
| נתוני השכלה בתיכון |
| עבודה במהלך הלימודים |

# Research Method: SMA Questionnaire

1. Internal Motivation

2. External Motivation

3. Learning Control

4. Self-Efficacy

5. Readiness: Language, and economically

6. Studies Importance

7. Readiness for Change

# SMA Questionnaire: Internal Motivation

The index includes 8 items.

Examples:

"I study because "I have to"".

"I study for exams only when they are coming".

"I keep trying answer questions even if it requires time".

# SMA Questionnaire: External Motivation

The index included 3 items.

Examples:

"When I study for a course, high grade is what causes me satisfaction"

"I want to succeed in my studies because it is important to me show my abilities to my family, friends, my boss and others".

# SMA Questionnaire: Learning Control

The index includes 5 items.

Examples:

"I have the ability to deal with hard questions alone"

"If I work hard enough, I can understand the study materials."

# SMA Questionnaire: Self-Efficacy

The index includes 4 items.

Examples:

"I am sure I can understand the hardest study materials"

"I believe that I am clever and smart as others".

# SMA Questionnaire:
## Readiness: Language, and economically

**Economic Readiness**

1 item: "I am going to start these studies economically ready"

**Language Readiness**

1 item: "I come to school prepared in terms of understanding the language."

# SMA Questionnaire: Studies Importance

**Study Importance**

1 item: "The studies I am going to start are important to me"

# SMA Questionnaire: Readiness for Change

**Pre-Contemplation**

"I have no problems in my studies, and if I do, it is not my fault."

**Contemplation**

"Studies are important to me, but when I come across hard material, I give up very quickly."

**Action**

"If I come across something different than I expected / planned, I choose to act and deal with it."

**Maintenance**

"Although my grades were excellent, I always felt I need a push to help me continue to learn and succeed."

# Results

# Dropout is correlated to:

1. Hebrew Readiness (0.136*)

2. Internal Motivation (0.190**)

3. Readiness to change (0.139*)

# Hebrew Knowledge

**Students who were not ready tended to:**

1. to drop out

2. Have *less internal motivation*, *more external motivation*

3. Be *less ready to change*

4. Be *less ready economically*

5. *less study importance*

# Economic Readiness )not correlated to drop out)

**Students who were not ready tended to:**

1. Less internal motivation

2. Less external motivation

3. Less learning control

4. *More ready to change*

5. *More study importance*

# Motivation

Students with ***high internal motivation** were tended to:

1. Less dropout

2. More self-efficacy and more learning control

3. More ready to change and even more ready economically

| | |
|---|---|
| Drop-Out Rate | 4.6% |
| Economic Readiness Mean | 5.1 |
| Study Importance Mean | 6.1 |
| Self Efficacy Mean | 5.7 |
| Learning Control Mean | 6.3 |

*Higher than the mean in the sample

# Motivation

Students with *high **external motivation** were tended to:

1. No correlation with dropout

2. Less ready to change

3. Less learning control

4. Less readiness- Hebrew and economically

| | |
|---|---|
| Learning Control Mean | 6.3 |
| Economic Readiness Mean | 5.5 |
| Hebrew Readiness Mean | 5.5 |

*Higher than the mean in the sample

# Dropped-out students

## Internal Motivation

| | |
|---|---|
| *Low | 88% |
| **High | 12% |
| Missing | 0% |

## Hebrew Readiness

| | |
|---|---|
| *Low | 47.1% |
| **High | 41.2% |
| Missing | 11.8% |

*Lower than the average.
**Higher than the average.

# Research in Israel and Hungary

- February-March 2020

- Place: 2 universities (Israeli, Hungary)

- Method: self-administered questionnaire

- Population: IT students

- Sample: N=101 (Hungarian: 72, Israeli: 29)

- 40 statements: 7-grade Likert-scale

# Extrinsic Motivation and Behaviour Change

| Extrinsic motivation | Stage of behaviour stage | Corr. |
|---|---|---|
| When I study in a course, getting a high grade is the thing that will bring me the most satisfaction. | I have no schooling problems and if something doesn't work, it's not because of me. **(Pre-cont.)** | **.245*** |
| I want to succeed in school because it is important to show my ability to my family, friends, employer or others. | I have no schooling problems and if something doesn't work, it's not because of me. **(Pre-cont.)** | **.234*** |
| When I study in a course, getting a high grade is the thing that will bring me the most satisfaction. | When I come across a problem in the curriculum, I think about the problem and take into account the various considerations and possible implications. **(Cont.)** | **.375**** |
| I want to succeed in school because it is important to show my ability to my family, friends, employer or others. | When I come across a problem in the curriculum, I think about the problem and take into account the various considerations and possible implications. **(Cont.)** | **.373**** |

# Extrinsic Motivation and Behaviour Change

| Extrinsic motivation | Stage of behaviour stage | Corr. |
|---|---|---|
| When I study in a course, getting a high grade is the thing that will bring me the most satisfaction. | If I can't solve my homework, I'll keep trying despite the difficulty. **(Action)** | .339** |
| When I study in a course, getting a high grade is the thing that will bring me the most satisfaction. | If I come across something different than I expected / planned, I choose to act and deal with it. **(Action)** | .355** |
| When I study in a course, getting a high grade is the thing that will bring me the most satisfaction. | If I recognize that my studying method is ineffective, I try new learning in new methods. **(Action)** | .383** |
| I want to succeed in school because it is important to show my ability to my family, friends, employer or others. | If I come across something different than I expected / planned, I choose to act and deal with it. **(Action)** | .304** |
| In my undergraduate studies, my main goal is to achieve a high-grade average. | Although my grades were excellent, I always felt I need a push to help me continue to learn and succeed. **(Maint.)** | .255* |
| When I study in a course, getting a high grade is the thing that will bring me the most satisfaction. | Although my grades were excellent, I always felt I need a push to help me continue to learn and succeed. **(Maint.)** | .243* |

# Intrinsic Motivation and Behaviour Change

| Intrinsic motivation | Stage of behaviour stage | Corr. |
|---|---|---|
| When I study new material, I prefer it to be a challenge for me, so I can learn new things. | I have no schooling problems and if something doesn't work, it's not because of me. **(Pre-cont.)** | **.232*** |
| When I study new material, I prefer it to be a challenge for me, so I can learn new things. | Whenever I don't pass an exam, it's probably not my fault, is because the exam was hard. **(Pre-cont.)** | **-.263**** |
| In my studies, I enjoy coping with hard material. | Schooling is important to me, but when I come across a hard material, I give up very quickly. **(Cont.)** | **-.220*** |
| When I study new material, I prefer it to be a challenge for me, so I can learn new things . | Schooling is important to me, but when I come across a hard material, I give up very quickly. **(Cont.)** | **-.250*** |
| When I have difficulty, I will work hard to overcome it. | Schooling is important to me, but when I come acrossa  hard material, I give up very quickly. **(Cont.)** | **-.273**** |
| When I have difficulty, I will work hard to overcome it. | When I encounter a problem in the field of studies, I start to think that this topic is not for me. **(Cont.)** | **-.262**** |

# Intrinsic Motivation and Behaviour Change

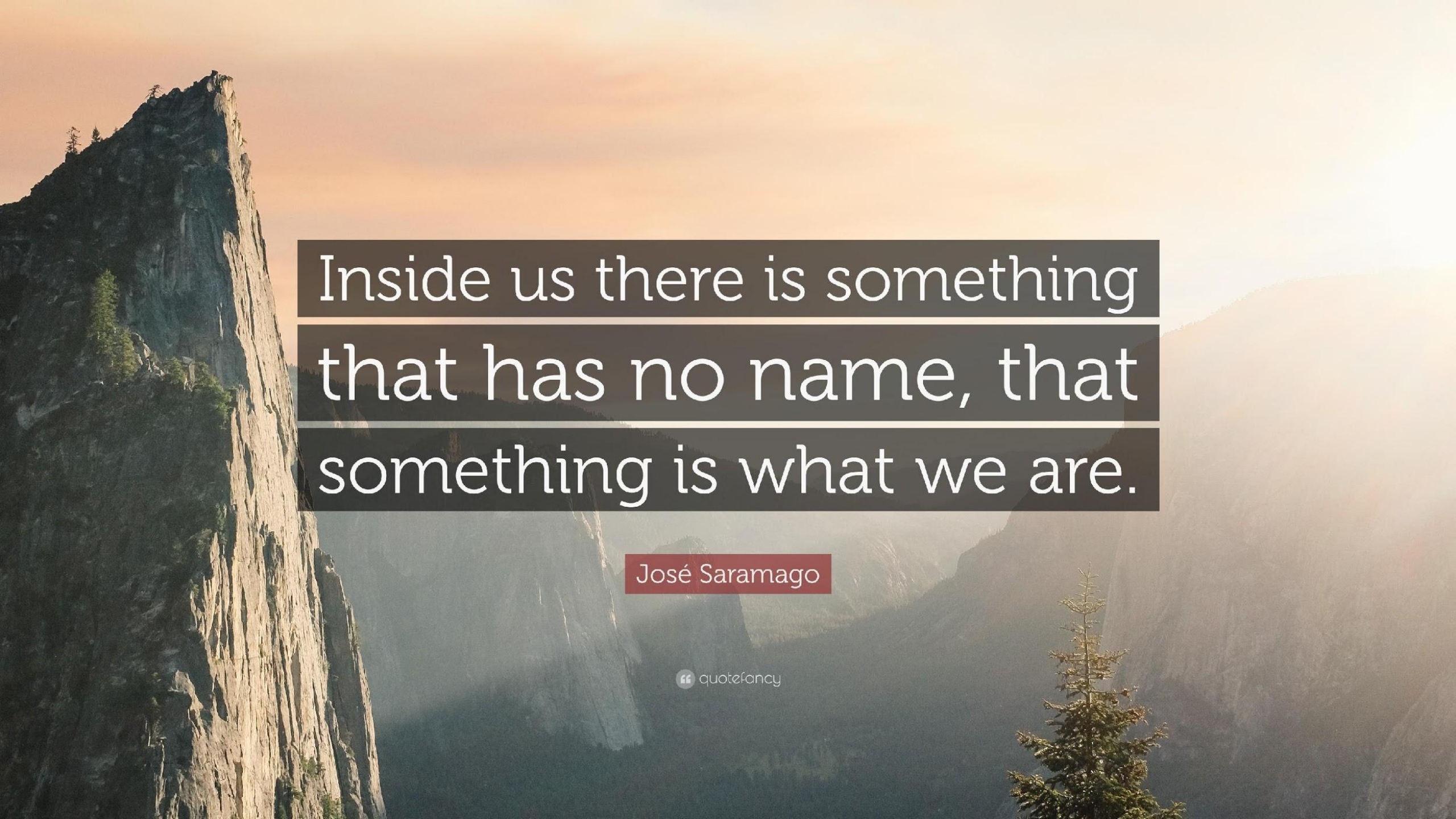| Intrinsic motivation | Stage of behaviour stage | Corr. |
|---|---|---|
| In my studies, I enjoy coping with hard material. | If I can't solve my homework, I'll keep trying despite the difficulty. **(Action)** | .575** |
| I read materials without being instructed to. | If I can't solve my homework, I'll keep trying despite the difficulty. **(Action)** | .523** |
| I read materials without being instructed to. | If I recognize that my studying method is ineffective, I try new learning in new methods. **(Action)** | .557** |
| When I have difficulty, I will work hard to overcome it. | If I can't solve my homework, I'll keep trying despite the difficulty. **(Action)** | .661** |
| When I have difficulty, I will work hard to overcome it. | If I recognize that my studying method is ineffective, I try new learning in new methods. **(Action)** | .616** |
| When I have difficulty, I will work hard to overcome it. | If I come across something different than I expected / planned, I choose to act and deal with it. **(Action)** | .549** |

# Intrinsic Motivation and Behaviour Change

| Intrinsic motivation | Stage of behaviour stage | Corr. |
|---|---|---|
| In my studies, I enjoy coping with hard material. | To me, it is very important to learn towards each lesson / practice. **(Maint.)** | .504** |
| When I study new material, I prefer it to be a challenge for me, so I can learn new things. | To me, it is very important to learn towards each lesson / practice. **(Maint.)** | .484** |
| When I study new material, I prefer it to be a challenge for me, so I can learn new things. | Despite my impressive achievements in school, I think I should continue to invest in my studies. **(Maint.)** | .485** |
| When I have difficulty, I will work hard to overcome it. | To me, it is very important to learn towards each lesson / practice. **(Maint.)** | .631** |
| When I have difficulty, I will work hard to overcome it. | Despite my impressive achievements in school, I think I should continue to invest in my studies. **(Maint.)** | .543** |

# Summary

Internal Motivation is the **key success**

External Motivation is **not enough** to succeed

Inside us there is something that has no name, that something is what we are.

José Saramago

# Thank you