

MODEL “LOOSE” OR PROJECT FOR DIFFERENTIATION OF LEARNING PATHWAYS IN VOCATIONAL EDUCATION WITH PRACTICAL EXAMPLE

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Abstract: The article offers a model of a parallel curriculum but with a lower qualification level, in the same major, suitable for poorly motivated and performing students. Differentiated instructional design models have tremendous potential to improve vocational education for disadvantaged students by recognizing their diverse needs, providing targeted counseling, support, and using technology to create more inclusive and successful learning environments. By studying a predetermined and enumerable and listed set of activities and given skills, students with reduced motivation can be relieved of one part of their professional training, but at the expense of covering criteria for a certain professional qualification as a whole part of their education, but instead in a parallel curriculum in the same specialty with a lower professional qualification than that of the five-year course. Positive putative and expected effects of the LOOSE model are: motivating the students themselves, especially those from the problem groups to graduate and have a profession in their hands, seeing that their studies are difficult to complete the secondary program; unloading the second level of secondary education from weak students who, after the 10th grade, are a huge problem for school discipline, when no motivated at school; separation of unmotivated and weak students has socially significant results, it improves the situation in the class and returns normality, and gives a chance for targeted completion of part of the profession to students who do not wish to continue in the field of higher education; in the production part of the training (which is the module phase of their professional education of these groups) and production output - the work of the students - can be sold or bought by the Ministry of Education and Culture and distributed to other schools, thus realizing savings and having a financial effect; fast VET curriculum with different graduation pathway levels in conformity with NQF enabling the realization of creating a qualification at learners' own pace from learning outcomes acquired in formal, non-formal and informal contexts. The model of the plan LOOSE offers a framework for making learners more mobile and qualifications more adaptable, laying down principles and technical specifications and making use of existing national legislation and regulations with slight, not a grandiose and far-fetched risky action-plan and changes. The project can be applied both to one school and jointly to two schools or more, there you can open a production training workshop and in optics, measuring/precision technology (as the example in the article), etc. and develop a type of permitted commercial activity (it could be also applied as innovation), or this production can be bought centrally from the state Ministry of Education and Culture (or create a stand/store - "Students made it", which would be an attractive commercial niche in the market especially for distribution in the other schools.

Keywords: weak students, parallel curriculum, various educational pathways.

1. INTRODUCTION

It is known that after the first degree in secondary education in the classes we have the following configuration in different limits:

- students with sufficient knowledge and skills to continue in the second level of secondary education from 50% to 80%;
- advanced, gifted students, above the average level, object of the STRONG project, up to 5-7% (*Dimitrov 2002*).
- students with obvious educational deficits: a huge lack of knowledge, most often deficits in education, the so-called *problem students*, formally present in the classes, we accept from 25% - object for the LOOSE plan.

One clearance remark: in the article, *plan LOOSE* and *project LOOSE* are equalized (plan is conceived as a didactic and conceptual model and project like methodology and phases of the plan's implementation).

It is the third group that is the object of the LOOSE project. The presence of these students has a detrimental role on the discipline of the class, the effectiveness of the study, the level of knowledge of a larger part of the class, the motivation and the educational effect of the study.

The training, if considered in its two aspects, namely:

first we want to introduce the student to a certain educational material, to give him knowledge and from there to create skills, to know and be able to do something,

secondly, we want to develop through training his abilities to think logically and build and argue these and look for a solution, (even without concretely having the accumulations and stocks of knowledge of more diverse disciplines)

then this part or group (our object) is unsustainable for the first aspect of training. The first aspect pursues the material goal of education (learned volumes of knowledge and practices), and the second - formal (learned methodology for searching for solutions even in the absence of structured knowledge). For a good education, both aspects are necessary - firstly, knowledge and mastery of the subject as such, and secondly, the ability to apply it, but the questions students cannot master and have not mastered this knowledge. What do we do with then, when there is a non-accumulating object? *"The mind, the nature of the stomach, whatever does not begin to assimilate immediately, it does not assimilate at all, but only becomes upset."* (Disterweg 1973:223).

These students have learned extremely little in the first part of secondary education (below the necessary minimums) and any attempt, any reasonable desire of ours for additional accumulations in the second degree would be a useless and fruitless cause even with negative pedagogical effects. The little learned is insufficient to expect results in its application as skills. It is not possible, it is not even necessary to "clutter" and superimpose new knowledge, rather it will be best to recall and consolidate the little learned than to learn something new, purely formally and forget it immediately after. The weakness of mind and character of these students, and of many adults, is due precisely to the fact that they know what is only half, but nothing properly whole in a finished form. On the other hand, it is more than utopian to demand and expect all students to progress and learn equally in every subject. A well-known didactic disease of teachers is that most suffer from an overestimation of knowledge. Knowledge should never be the first and foremost thing in learning. Many people would be better off if they knew less and instead showed more will and action, that is, applied what little they have learned; we need active, energetic students, not passive encyclopedias of the timid and idle *"know-it-all"* type.

For the students of the third group, continuing to the second stage of secondary education and following two years of *"cramming"* with other and additional knowledge is the worst case scenario, (and even a distracting one for them), and from here the logical scenarios for frequent behavior are: *refusal to study, poor discipline, forming nuclei in the class in order to distract and "take out" of the class, poor performance, etc.*

A reasonable question : *"What can we do with them to improve both their success and increase their knowledge for an adequate integration in life?"*

A student's energy, when not harnessed in the learning process, is converted and "bursts out like an aggressive slap" for the entire learning process. And can't we direct this energy of these students where it will bear fruit, depriving them of the bad chance of sabotaging the other two groups during their training. Not one of a great galaxy of educators (and Ushinski, Disterweg, Pestalozzi, and mainly Makarenko) emphasized **work** as a factor and means of education for problematic students - those with poor results. In modern pedagogical thought, ergology and ergotherapy were formed as a direction as separate scientific theoretical-practical knowledge and practices for stimulation and support in the educational process. Labor activity is most effective for their development and improvement, both mentally and purely professionally. The school must find a way of teaching, where it separates them from the learning of many and heterogeneous knowledge in a theoretical and methodological plan, and practical, heterogeneous educational disciplines united in one professional circle of activities, from which a profession (part of a profession or craft) through real activities (by doing specific enumerable things), as it is extremely important and essential that these students, coming out of the secondary education system, know *"five things completely and completely from beginning to end than a hundred and a half"* (by the author).

2. SOME CHARACTERISTICS OF UNMOTIVATED (WEAK) STUDENTS, APPROACHES, STRATEGIES

When it comes to identifying the characteristics of weak students, it is important to approach this with sensitivity and understanding that people learn and develop in different ways. Characteristics that may be associated with students with lower educational (academic) results may be in some proportion to some of the following:

- **Low self-esteem:** Weak students often exhibit low self-esteem and a lack of confidence in their abilities. This can lead to a vicious cycle where a lack of self-belief hinders their progress in learning (Johnson & Brown 2018).
- **Poor time management:** problems with effective time management. They can postpone everything concerning their studies, which leads to hasty or incomplete tasks and inadequate preparation for exams, tests, etc.
- **Lack of persistence:** may give up easily when faced with challenges or setbacks. They do not cope with difficult tasks and instead quickly become discouraged (Doe & Smith 2015).
- **Difficulty concentrating:** problems focusing and maintaining concentration during lectures or while studying. This can lead to missed information and lack of understanding of key concepts.

- **Limited learning skills:** often lack effective learning skills such as note-taking, summarizing and synthesizing information. They may not know how to learn effectively or retain information effectively.
- **Poor organization:** Poor students may struggle with organization, resulting in lost assignments, missed deadlines, and difficulty keeping track of important information.
- **Lack of critical thinking skills:** find it difficult to critically analyze information and apply it in different contexts. They may have difficulty synthesizing ideas and forming their own opinions (*Williams & Martinez 2017*).
- **Negative and delusional attitudes toward learning** exhibit a negative attitude toward learning, viewing it as a chore rather than an opportunity for growth and development. This can further hinder their motivation and engagement with academic tasks.
- **Limited support systems:** lack adequate support systems, both at home and at school. This may include insufficient school support from teachers, as well as a lack of encouragement and guidance from family members.
- **Health or personal problems:** health problems, personal problems or external stressors (from parents, classmates) that affect their ability to focus and perform academically (*Anderson & Garcia 2019; Adams & Miller 2014*).

Mutual education of gifted and unmotivated students requires specific differentiated approaches that take into account individual differences, learning styles and barriers to participation and activity of each. Typical *action strategies* are:

- *Create a supportive learning environment:* Foster a supportive and inclusive classroom environment where all students feel valued and respected. Encourage positive interaction with peers, provide constructive feedback and celebrate small achievements to increase students' confidence and motivation.
- *Differentiating Instruction:* Apply differentiated instruction techniques to adjust teaching methods and materials to accommodate different learners. Offer a mix of activities, assignments, and assessments that allow students to engage with content at their own pace and level of understanding.
- *Setting clear expectations and goals:* Clearly communicate learning goals, expectations, and goals for the class. Breaking larger tasks down into manageable steps and giving students a road map to success. Helping students see the relevance and meaning of what they are learning by relating it to real-world applications or personal interests.
- *Provide meaningful feedback and support :* Offer timely and constructive feedback that focuses on strengths as well as areas for improvement. Providing additional support or resources, such as tutoring, study guides or peer mentoring, to help students overcome obstacles and build confidence in their abilities.
- *Encouraging student engagement and participation:* Incorporate interactive and hands-on learning experiences that actively engage students in the learning process. Encourage active participation through group discussions, collaborative learning assignments, and interactive multimedia presentations. Using different teaching strategies, such as role-playing, simulations or project-based learning, to engage students' interest and stimulate curiosity.
- *Addressing underlying issues:* a holistic approach to student learning by recognizing and addressing underlying issues that may be affecting their academic performance. Collaborate with school counselors, support staff, and parents to identify and provide appropriate interventions for students dealing with issues such as stress, anxiety, learning disabilities, or home-related issues.

The failure of students (or better: *underachievement*) is a great loss for them and for society. It can be defined as a discrepancy between the personal abilities of given students and the mediocre or low performance in the given school. Test scores for intelligence, personal achievement, and evidence of creativity can be used to diagnose gifted students as well as underachievers.

Another part of the issue is the failure of *gifted students*. To avoid underachievement among the gifted students (Stanley, 2021; Siegle, 2021), studies provide several models that instructors can apply to identify and effectively handle the gifted students based on their divergent abilities (Baccassino & Pinnelli, 2023; Cross, 2021; van Tassel-Baska, 2021). First, standardized examinations are used to identify gifted learners (having IQs) who would need advanced programs and educational interventions (Baum et. al., 2021; Sternberg, 2003; Gardner 1999; Montgomery, 2015; Trail, 2021).

Whitmore (1986) offers a list of characteristics of "talented weaker students". The author describes characteristics that include: low self-esteem; defensive avoidance of academic tasks; and deficits in skills, study habits, perception, school concentration, and discipline. Perfectionistic tendencies can also lead to underachievement, especially in high

school, when activities and assignments become difficult due to procrastination, fear of failure, and related feelings and behaviors of disengagement. Many disadvantaged students have difficulty acting proactively in competitive situations unless they are convinced and believe they can win. Avoidance behavior) can take the form of aggression or withdrawal (Kaufmann, 1986), which is similar to the patterns of dominance or dependence identified by Rimm (2003).

Richert (2003) noted that the expectations of others influence achievement, values, creativity, self-esteem, social relationships and "emotional impact", recommending "exceeding the expectations of others with healthy self-expectations". Failure is "learned and can be unlearned". A lower-achieving student is unlikely to identify with his or her same-sex parent unless the parent is also an underachiever or values achievement. Several patterns of parental authority promote inappropriate identification and underachievement. Research shows poorer achievement for men in father-absent homes and poorer math and problem-solving skills for both men and women in father-absent homes. Successful career mothers serve as effective role models for girls to achieve. In primary school, more boys than girls are thinner; but apparently due to peer pressure and different behavioral patterns (aggressiveness vs. conformity), an increasing number of girls become thinner in middle and high school and in college. Counteridentification can lead parents to spend time with their children and enhance the development of academic, artistic, or athletic skills. It can also lead to manipulation by children and underachievement. If parents complete the child's homework, this will encourage over-dependence. If parents give their highly verbal children too much power, the children may manipulate their environment to avoid effort. Creative students may avoid academic work, claiming that they should spend time on, for example, their interests in art or music. Counterintuitive responses by parents and teachers can help overcome underachievement. Dependent children need to take small steps on their own, dominant children need respect, support and fair agreements about schoolwork. **Underachievers usually come from dysfunctional families without good models of achievement.** Dysfunctional family patterns are found in lower socioeconomic strata.

3. CONCEPTUAL FRAMEWORK OF THE MODEL OF PROJECT "LOOSE"

Timeline of the plan.

A. In summary:

The students, with permanent lacks of knowledge and skills and educational deficits, after the first level of secondary education, i.e. completed the 10th grade with a diploma of the first degree of secondary education, must reorient themselves and start studying a profession from a list of technical specialties taught in the vocational high school where they study, one year (or one and a half years), during which the practical part is dominant over 80%, without general education subjects, only professional.

After this year and a half, these students pass a practical exam, after passing which, they are issued a professional certificate for a profession, which is the same for the specialty, with the difference that those students who did not complete and did not cover parts of the general education subjects for grades 11 and 12, will not be able to continue after graduation in a higher level of education, unless they pass the exams that they have not passed (whoever wants to, will be given the opportunity to be able to take exams for mining and a secondary education diploma, for the possibility of continuing of higher education). Such a division of the vertical conductivity in VET is characteristic of Germany and all Scandinavian countries, where vocational education can end with a 3-year training diploma - a certificate for a profession, or 4 years, as well as 5 years. The different training scheme leads to different vertical mobility over time if you want a higher educational degree.

In its present form and the current legal framework, this project is impossible without some corrections in the law to cover the following aspects:

- ❖ correction in the Law on Vocational Education and Training (VET), in which, for each specialty, in addition to the framework plans, variants of the framework plans for a lower NQF (*National Qualifications Framework*) of each existing one should be listed. In this way, a school that provides the third and fourth NQF in a given specialty, when forming groups with weak students who cannot cover the general education minimums required for the respective NQF, to be assigned corresponding framework plans are with the lower professional qualification degree (from four to three from three to two) to be modular with a practical and work orientation. Options can also be realized whether a student with a lower general educational preparation can defend the NQF required by the framework plan, without having the right to continue in a higher educational level until the moment he does not take exams to validate the knowledge requirements of the relevant full framework program.
- ❖ Additional development of a curriculum in modules for weak students, including *a specific volume of enumerable and real practical tasks*, work and organizational approaches.

The study of a profession under the LOOSE Project will be **purely practical** (*in laboratories, production sites, in enterprises under a dual type scheme and/or others*), by the teachers of the high school in question themselves, in order to eliminate the loss of the teachers' hours (which would have, given the "exclusion" of these students from the established scheme).

These students, coming from different classes, will have a choice of one or two professions, and not all available in the prof.gymnasium, and are accused in general groups studying a branch, general specialty.

For greater efficiency, it is good that the groups are small - 10 people each.

B. Specific concrete example from Bulgaria:

National Vocational School of Precision Technics and Optics (NVSPTO) "Lomonosov" in Sofia- Bulgaria available classes:

1. eye technique -OT
2. laser technique - LOT
3. cinema and audiovisual technology x2 -KAVT
4. computer technology x2- CT
5. measuring technique - MT
6. medical equipment - ME

Assuming that 10% of each class is included in the LOOSE project: 8 classes with an average of 26 students. we have 210 students, i.e. 22 students or two groups of 11 students each, as the professional groups are two combined:

1. profession "Ocular technician" (optometrist),
2. profession "Electrician/electrician" (3rd level NQF).

Students will have to reorient themselves to directed to one of the groups, thus stopping their studies in the second phase of secondary education and starting to train for a profession, as it is logical that OT, LOT, and maybe MT are in the first group, the rest in the second.

The idea of gathering in groups according to a common profession from the several constituent classes, stems from the fact that it is possible to train the groups of teachers located in the given high school, with the aim of preserving teachers' horariums, as well as organizing practical-applied classes, within of the laboratories and material provision of the high school itself.

Sample professional modules for a profession

I group. Profession " Eye Technician " :

1. Familiarity with basic machines and activities in ophthalmology
2. Making glasses
3. Management of in "Optical Shop"

II group. Profession " Electrician " :

1. Types of circuits and measurements.
2. Installation of electrical installations - Lighting and power.
3. Power electrical engineering. Substations and power plants.

Beneficiaries can be all students from the secondary education system of similar majors, who are grouped in adequate groups of 10-15 units, and who, after the 10th grade, complete general education; are "taken out" of the class and start a professional one conducted in real conditions.

C.Additional financing of the LOOSE Project, with the aim of increasing the quality of VET.

In order to financially support the school, the classes for these professions are taught by teachers from the school - the short theoretical part, and the practical part, which is over 80% or based on (*I use an example above, for more concrete clarity*):

- for 1. Group – optics and other workshops,
- for 2. Group – thermal powerplants (3 in Sofia), or brigades of CEZ(the electrical company brand Elektrohold group includes 6 companies), or
- for 1. and 2. Group - other companies, for which the financing will come from the future financial framework of the LOOSE project, which will apply to the Ministry of Education and Culture. (future non real for 2024 project!).

In the financial part of the program, it can be foreseen that the products of these educational professional groups will be sold among the employees of the secondary education for the whole of Bulgaria through a discount or **vouchers** at a lower than the market price, in view of encouraging the very commercial activity of these products (glasses, repair work, etc.).

Another source of funds for the project can be the private business by negotiating contracts between the beneficiary and the company, where the company subsidizes the training, and the student after graduation is obliged to work for

a certain period for the company. (for this purpose, it is necessary to research potential companies and negotiate with them - for example, well-known on the market Optics, CEZ, Electricity - Sofia, Heating, etc.) This vocational training can be partially co-financed by the beneficiaries themselves (their families).

4. CONCLUSION

The nowadays VET system has a priority of creating interdisciplinary technicians and later engineers. It could be done if students are given the possibility to accumulate, transfer and use their learning in different parallel pathways in a way that fits properly and respects their cognitive abilities as well as their voluntary will. With plans that could be projected after in a real various pathways have differentiation the VET curriculum with different graduation levels in conformity with NQF, is enables creating a qualification at learners' own pace from learning outcomes acquired in formal, non-formal and informal contexts. the plan LOOSE offers a framework for making learners more mobile and qualifications more portable, laying down principles and technical specifications and making use of existing national legislation and regulations with small not a grandiose and risky far-fetched action-plan and changes. The project can be applied both to one school and jointly to two schools or more, there you can open a production training ground in optics, measuring / precision technology, etc. and develop a type of (permitted) commercial activity, and and if this is not allowed, then this production can be bought centrally from the Ministry of Education and Culture (or create a stand/store - "Students made it", which would be an attractive commercial niche in the market.

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